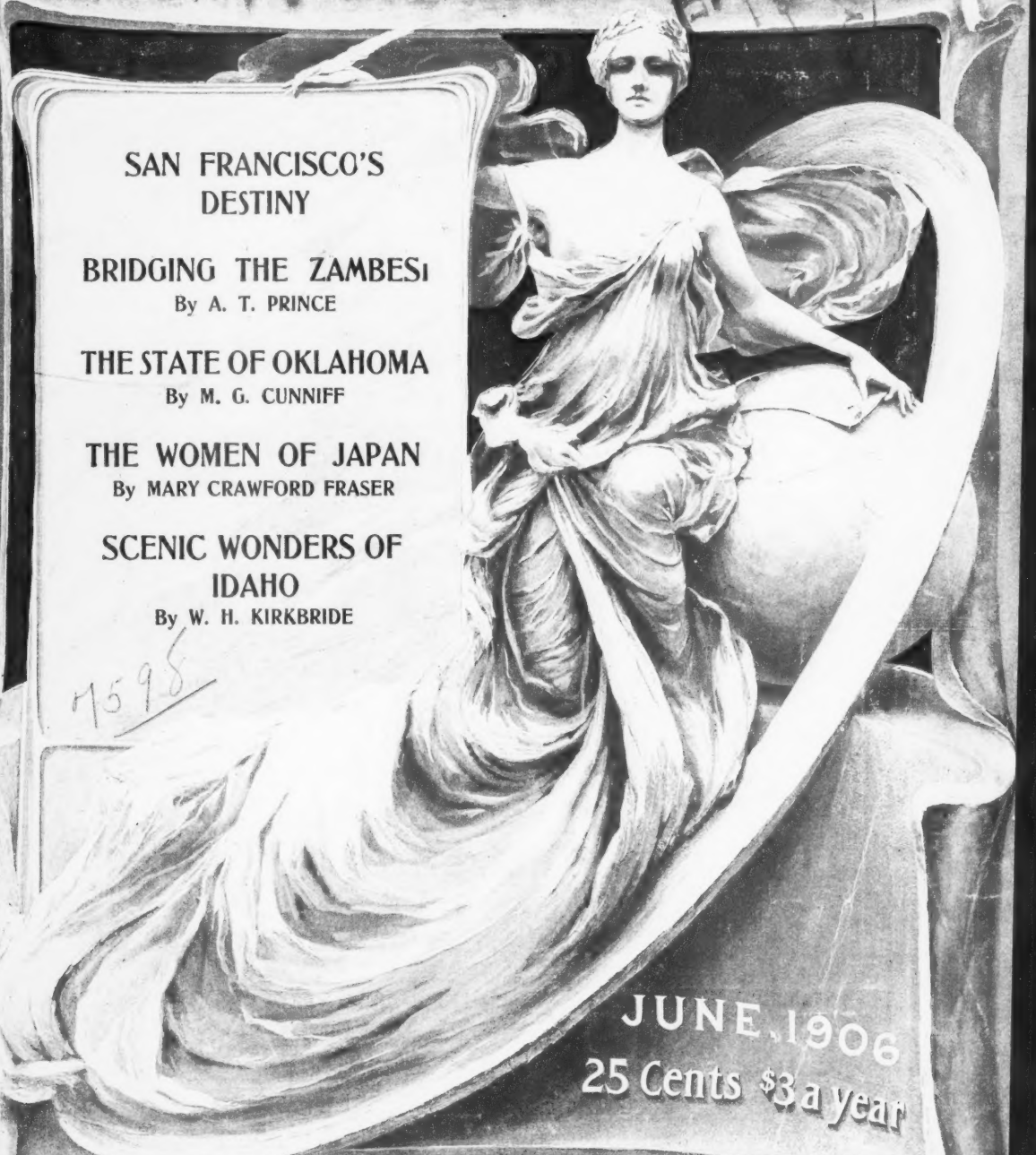
THE WORLD'S WORK



SAN FRANCISCO'S DESTINY

BRIDGING THE ZAMBESI
By A. T. PRINCE

THE STATE OF OKLAHOMA
By M. G. CUNNIFF

THE WOMEN OF JAPAN
By MARY CRAWFORD FRASER

SCENIC WONDERS OF IDAHO
By W. H. KIRKBRIDE

1595

JUNE, 1906
25 Cents $3 a year

DOUBLEDAY, PAGE & COMPANY, NEW YORK
WILLIAM HEINEMANN - LONDON

PACKER'S

TAR SOAP

PURE AS THE PINES

The World's Work

WALTER H. PAGE, EDITOR

CONTENTS FOR JUNE, 1906

FULL PAGE PORTRAIT OF GENERAL FREDERICK FUNSTON - - - - - - - - - - - - - - - - *Frontispiece*

THE MARCH OF EVENTS—AN ILLUSTRATED EDITORIAL INTERPRETATION 7580

(With full page portraits of Mayor J. N. Adam, and the late Nathaniel Southgate Shaler, and photographs of the San Francisco earthquake.)

THE DESTRUCTION OF SAN FRANCISCO
ABOUT PUBLIC NERVOUSNESS
THE REASON FOR PUBLIC UNEASINESS
ARE GREAT FORTUNES DANGEROUS?
THE DECLINE OF STATE GOVERNMENTS
A LITTLE TARIFF EARTHQUAKE
AN END TO FRAUDULENT DIVORCE
PROGRESS ON THE CANAL
THE ENACTMENT OF INSURANCE REFORM
THE RUSSIAN PARLIAMENT
FOR AMERICAN INFLUENCE IN CHINA
EUROPE AS THE EMIGRAN SEES IT
THE COLLEGE DEGREE AND AN HONEST SUGGESTION
REDISCOVERING RURAL EDUCATION
PROSPERITY'S HUMAN WASTE
THE DIME NOVEL AND THE SOFT NOVEL
THE ERUPTION OF VESUVIUS
A NEW ERA IN LIFE INSURANCE
THE HOPE FOR FREE ALCOHOL

WHAT SORT OF STOCKS A PRUDENT MAN MAY BUY - - - 7600

THE NEW STATE OF OKLAHOMA (Illustrated in part by photographs by J. B. Kent) - - - - - - - - - M. G. CUNNIFF 7603

THE URGENT NEED OF TRADE SCHOOLS - F. A. VANDERLIP 7619

JAPANESE WOMEN AND THE NEW ERA (Illustrated) - - - MARY CRAWFORD FRASER 7625

THE IRIDESCENT GLASS TRUST - - - FREEMAN HARDING 7631

BRIDGING THE GORGE OF THE ZAMBESI (Illustrated) A. T. PRINCE 7637

THE SCENIC MARVEL OF IDAHO (Illus.) WILLIAM HOWARD KIRKBRIDE 7648

A MAYOR OF ALL THE PEOPLE - - - ISAAC F. MARCOSSON 7655

MUSIC BY ELECTRICITY (Illustrated) - - - MARION MELIUS 7660

THE MODEL SCHOOLHOUSE (Illustrated) - CHARLES C. JOHNSON 7664

THE LABOR PARTY IN ENGLAND - - CHALMERS ROBERTS 7668

A NEW ISTHMIAN RAILROAD (With map) - EDWARD M. CONLEY 7672

NATHANIEL SOUTHGATE SHALER - - - LANGDON WARNER 7676

THE CAUSE OF THE GREAT EARTHQUAKE - - - - - - ARTHUR C. SPENCER AND RALPH ARNOLD 7678

THE NEW SCIENCE OF BUSINESS: - - - - - - - - - 7682

MAKING AN OFFICE EFFICIENT - - - - - EDWARD D. PAGE
CATALOGUING ACQUAINTANCES
THE NEED OF COMMON SENSE ACCOUNTING

APPRAISALS OF NEW BOOKS - - - - - - - - - - 7686

AMONG THE WORLD'S WORKERS - - - - - - - - - 7688

DICKSON'S DEPARTURE
WHERE GREENBACKS ARE MADE
PRESERVING THE SANTA FÉ TRAIL
MOVING PICTURES OF GROWING PLANTS

TERMS: $3.00 a year; single copies, 25 cents. Published monthly. Copyright, 1906, by Doubleday, Page & Company All rights reserved. Entered at the Post-office at New York, N. Y., as second-class mail matter.

Country Life in America **Farming** **The Garden Magazine**

CHICAGO 1515 Heyworth Building **DOUBLEDAY, PAGE & COMPANY,** NEW YORK 133 East Sixteenth Street

Courtesy of Harper's Weekly

BRIGADIER-GENERAL FREDERICK FUNSTON

WHO DISPLAYED ADMIRABLE JUDGMENT AND ABILITY IN RESTORING ORDER IN SAN FRANCISCO AFTER THE DISASTER

[*See the March of Events*]

No. 050 W5(5)
DETROIT, MICH.

PUBLIC LIBRARY
MAY 28 1906
DETROIT, MICH.

THE WORLD'S WORK

JUNE, 1906

VOLUME XII

NUMBER 2

The March of Events

BEFORE the ruins of San Francisco were cold, this message was telegraphed to Chicago: "Send us architects and builders," and men whose homes had been burned were discussing plans to carry out Mr. Burnham's magnificent scheme for a beautiful city—more beautiful by far than could have been made but for the fire.

And a week had not passed, and thousands were yet living in tents, before the talk of the whole country also was turned to the rebuilding of the city. Men were removing the smoldering débris and real estate was said to hold its former value; for Kipling's American was there who

> ——turns a keen, untroubled face
> Home to the instant need of things.
>
> ——Elate,
> He greets th' embarrassed gods, nor fears
> To shake the iron hand of Fate.

Yet there was no boastfulness in all this. It was only the indomitable, constructive American way of doing things. Nor was there a moment's despair in spite of the practical obliteration of the city. As one correspondent put it, there was a plenty of ashes but no sackcloth. The homeless population were patient and cheerful under misfortune, and they became immediately active and hopeful; and the whole country was instantly helpful. A few days after the earthquake, it was telegraphed that President Jordan of the Leland Stanford Jr. University was "laboring over plans for its reconstruction which he will present to the trustees next week. Meantime laborers have already been clearing away the débris."

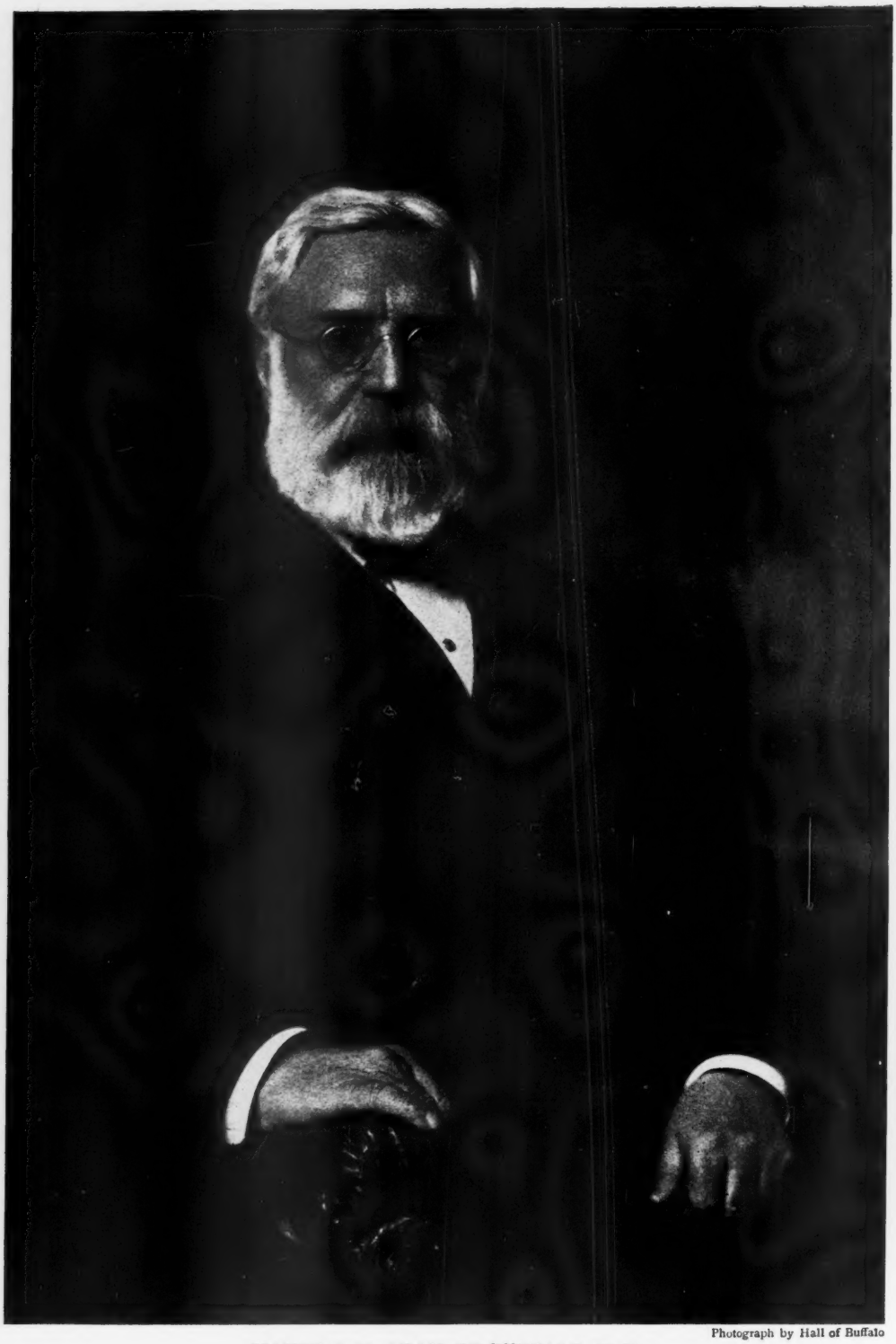
II

We have all by this time ceased to think of the destruction. We have almost forgotten that by far the most valuable parts of San Francisco were utterly destroyed by fire that instantly followed the earthquake on April 18, which was itself destructive. It was the greatest calamity of its kind in the history of the United States; for the burning of Chicago caused the loss of fewer lives and of much less property. The great fires in Boston, and in Baltimore, the earthquake that did severe damage to Charleston, and the destruction by the sea of Galveston were small disasters in comparison.

It is thought that about 300 persons were killed in San Francisco; 400 were seriously injured; and there were 1,000 in the improvised hospitals a week after the fire. More than 200,000—perhaps more nearly 300,000—were made homeless, and their occupations gone. The area of severe damage to the city by the quake was not large, and it was chiefly the low lying area. But the fire swept over a space of four square miles and destroyed practically the whole business section of the city and a great part of the residence section as well, including Chinatown and Nob Hill alike.

The spectacle was appalling—the sudden obliteration of a great city, perhaps a quarter of a million men, women, and children sud-

Copyright, 1906, by Doubleday, Page & Company. All rights reserved.

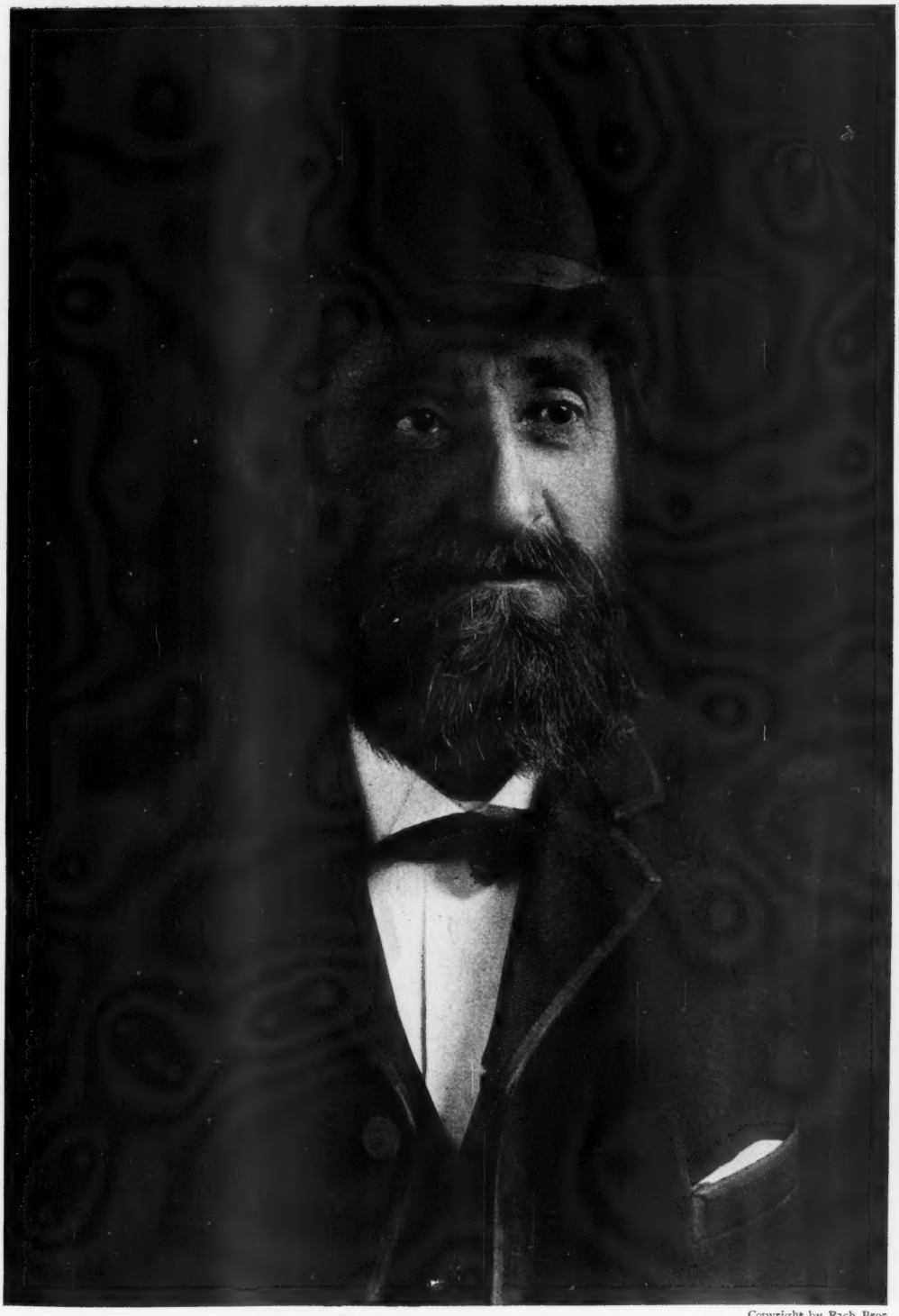


Photograph by Hall of Buffalo

MAYOR J. N. ADAM OF BUFFALO, N. Y.

AN ABLE AND PICTURESQUE EXECUTIVE WHO CONDUCTS THE CITY GOVERNMENT AS A WELL MANAGED BUSINESS IS CONDUCTED

[*See Page 7655*]



Copyright by Pach Bros.

NATHANIEL SOUTHGATE SHALER

THE LATE DEAN OF THE LAWRENCE SCIENTIFIC SCHOOL OF HARVARD UNIVERSITY, A TEACHER WHOSE SYMPATHIES EMBRACED ALL HUMAN INTERESTS

[*See Page 7676*]

denly made shelterless without sufficient clothing and without food. There were in that vast unfed, thirsty and hungry crowd human beings of every kind and quality. Some were born there. Some were dying. Some were married in their flight for life. The rich and the poor were huddled together, in the open spaces. Most of the food in the city was destroyed. The water was for a time cut off. There were desperate men made more desperate by this sudden sundering of the whole organization of life.

Yet order came almost instantly. The city was put under martial law, of course. The practical problems of clothing and feedingthis population of the homeless were solved with incredible swiftness and efficiency. All precautions were taken against an epidemic and life became safe and comfortable again before there was time for prolonged acute suffering.

And the response of the whole country was quick and generous. The National Government appropriated $2,500,000; more than $20,000,000 were subscribed by the people of the United States for relief, the people of New York City giving more than $3,000,000. Every agency helped—from the National Government to the railroads. Mr. Harriman, the President of the Southern Pacific road, went immediately to San Francisco from New York, and gave free passage to refugees and free service in bringing supplies.

That, too, was an impressive spectacle—a whole people ministering to the wants of their fellows, in subscriptions ranging from 10 cents to $100,000. It might be said, if human lives had not been lost, that the catastrophe was worth all that it cost in the demonstration that it made of American courage, American character, and rightmindedness. Wherever there was need of a hero, a hero appeared. Wherever there was need of help, help came. The stories of the experiences of the sufferers and of those that came to the rescue would make a cheerful and thrilling chapter of endurance, of resourcefulness, of courage,—of all good human qualities.

Nearly all the great buildings of the city were ruined by the fire. Strangely enough, the United States mint, with its treasure escaped. But the great City Hall, which cost $7,000,000, was practically destroyed by the earthquake. The steel structures—the sky-scrapers—withstood the quake. That was one important lesson of the catastrophe. It had, of course, been a moot point, whether steel buildings would resist a severe shock. The shock was severe, so severe as to tumble down buildings of brick and stone and to wrench and topple over substantial wooden houses; but the well-constructed steel houses held together, although their outer coverings of stone or brick were dislodged. This gives a good cue for the rebuilding of the city. For there have been many earthquakes in this region and there will be more.

The quake extended in its severity for a distance of several hundred miles along the coast. Great damage was done at Santa Rosa to the north where a number of persons were killed. Southward, the beautiful little city of San José was greatly damaged and more than 100 persons perished. A part of the impressive buildings of Leland Stanford Jr. University at Palo Alto were destroyed, including the beautiful memorial church. Much damage was done in Oakland, across the bay from San Francisco, but there fire did not follow the shock.

III

Long after life has resumed its usual course, the great human lesson of the catastrophe will be remembered. Some brave civilians, for example, had long taken pleasure in the persistent abuse of General Funston. But in military command of the desolate city he instantly showed himself a born and trained leader in a great emergency, as full of resources as if his business had always been restoring order in burned cities and providing for homeless thousands. Almost every 'orthodox" political journal in the land, again, had had its fling at Mayor Schmitz, the Labor politician. He, too, proved equal to his task. Again, all yellow journalism had for years tried, convicted, and sentenced almost every man of great wealth in the country. They, too, felt the common impulse to help the suffering, and such munificent contributions to relieve want were never before made. The East, again, had always ridiculed what it regarded as the affectation of gayety and the cheap recklessness of San Franciscan life. Yet these people met this overwhelming calamity with a courage and endurance that nobody could have excelled.

Recitals of such facts might fill this whole magazine. They show qualities of American character that make us all proud that we are

Photo by Orin. Hunt

AN EXAMPLE OF THE DEVASTATING EFFECT OF THE SAN FRANCISCO EARTHQUAKE

RUINS OF THE MAGNIFICENT $7,000,000 CITY HALL WHICH WAS TWENTY-FIVE YEARS IN THE BUILDING

(*See the March of Events*)

Copyrighted 1906 from a stereograph by Underwood & Underwood

THE EFFECT OF THE EARTHQUAKE ON A SAN FRANCISCO ASPHALT STREET

A GOOD EXAMPLE OF THE CHARACTERISTIC UPHEAVAL ALONG A "FAULT" LINE

(*See Page 7678*)

Americans. Military commanders and politicians, rich men and frivolous soldiers of fortune, and even members of Congress may be sinners in humdrum life, but human brotherhood and an heroic quality appeared in them all, when this test came; and this is a better measure of men than the partisan judgments of their every-day enemies. Scratch the American who has achieved something and you will be very likely to find both a hero and a brother to all that is human.

And this is a good fact to remember a long time.

IV

Even with earthquakes California is one of the most attractive parts of the world and it has more advantages than any other state in the Union. A wonderland of scenery and of climate, incalculably rich and varied in products of its soil, the state has during its short period of American occupation passed through four great industrial changes. First, mining made it dramatically rich; then its wheat-fields made it steadily rich for another period; then came the era of fruit-growing, and last the era of oil-wells. Emphasis was laid on each of these in turn; but none of these great sources of wealth is exhausted. Perhaps the time will never come when any of them will be completely exhausted. The fertility of the soil and the productive and alluring variety of climate surely will last till the mountains slide into the sea.

With all these advantages even many severe earthquakes could not rob the state of its charm nor of its economic attractions. This quake will not even seriously set it back except for the loss of property. Men will naturally prefer to live and to work in houses that will not easily tumble down or that tumbling down can do little harm (as in other countries of earthquakes); but men will continue to go there, continue to prosper there, to be happy there, and to proclaim their happiness as men make a satisfying religion known. The era of adventure is not yet passed, but an overlapping era of contentment and permanence has already come.

And San Francisco was and always will be the metropolis, the counting-house, the gateway of this land. Nothing less than the destruction of the Golden Gate could change its destiny. It has, perhaps, the most attractive site on either ocean or between them. It will be rebuilt better than it was and safer and worthier of its hills and its harbor. Mr. Burnham's great plan for a city there now may and ought to be carried out; and, if this be done, San Francisco may become in some important respects one of the most beautiful cities in the world.

V

But no such far-off and consoling thought can make up the real loss of property (to say nothing of the loss of life) which falls on this working generation. Hundreds of millions of value were wiped out of existence. Some of the loss—fortunately a good deal of it—was scattered. Non-resident owners of houses and other property and the real owners of fire-insurance companies suffer this diffused loss. The rest fell upon the residents of the unfortunate city; and this was real and large. Much of it can never be regained by the same persons that lost it. The ultimate gain that may come from building more wisely will come too late for most of them.

It gave good evidence of the soundness of our financial condition and methods that no real panic was caused. The United States Treasury sent vast sums to the Pacific, which were withdrawn from the East; the amount of money given outright for relief caused a very considerable displacement; the insurance companies had to get cash on their securities to pay their losses; the cessation of income from many Californian industries was a loss and their securities fell. These losses and displacements all came with the greatest suddenness, too; and yet the financial world felt no quake. This is a pretty good test of its security and a striking evidence of good management. There have been times when the sudden displacement of $200,000,000, or of half that sum, would have played havoc. When we have another panic, therefore, it will come from a big cause and not again from a little cause. The financial fabric is too strong and big and too tightly knit together to be easily shaken.

The rebuilding of the city and the rushing revival of its trade will give opportunities for the making of new fortunes, but they will hardly come, as the great Californian fortunes of the past came, in a lump or with a bewildering swiftness. They will come in more conventional and deliberate ways, won by dar-

ing and energy and foresight, rather than by luck.

VI

And such a spectacle as the rising San Francisco will present for a year or two was perhaps never seen in the building of any city. The rebuilding of Chicago after its great fire was not a parallel; for it was less dramatic, commerce and finance were not then so well organized, and even the courage and the energy of Chicago were hardly a match for the bounding enthusiasm with which the Californians, helped by all the world, are already going to work. There was never among men such a spirit of self-confidence, such a local pride, such an organized certainty of a great destiny, such a unanimity of purpose. It is almost a frenzy. When the city was standing and thought itself safe, it was one compact advertising and promoting community and a successful one—this, without any overwhelming reason for pushing forward. The skill and the earnestness with which every Californian community advertised itself in the quietest times was a new thing in human experience. Keyed still higher now, this energy will rebuild the city as if rebuilding big cities had been a regular occupation of the people. Having the financial confidence and the good wishes of the whole world, the frontiersmen who have outlived the frontier will turn architects and builders and boomers.

The newly-made city will have an elaborate civic group of buildings near its geographical centre—such is the Burnham plan; and about this will be built such an aggregation of buildings as nowhere exist together—the city hall, the post office, the public library, an opera-house, a theatre, the academy of art, the museum of art, a school of technology, the museum of natural history, the academy of music, an exhibition hall. Mr. Burnham has said that these buildings

"should have on all sides extensive settings, contributing to public rest and recreation, and adapted to celebrations. The architecture must be vigorous if it is to hold its own and dominate the exaggerated sky-line of its surroundings. The climate admits of a bold style of architecture, for the atmosphere softens profiles and silhouettes. The column should be freely used as the governing motif."

With its climate and its perpetual bloom, its hills and its Golden Gate—one of the most marvelous and unforgettable sites for a city in the whole world—with a history both romantic and dramatic, this metropolis on the Pacific, this gateway to Asia, this port of a great trade in the future will now appeal to the imagination even more strongly than it has hitherto appealed; and, made more beautiful, as it now will be, it will become one of the great as well as one of the fascinating cities of the world.

ABOUT PUBLIC NERVOUSNESS

A WELL informed English journalist who had spent some months in the United States, on one of his regular visits of observation, and had talked with many representative men, remarked, as he sailed home a few weeks ago, that he found American opinion exceedingly nervous. Most men that he met fear something—some, Socialism, others a check to prosperity and to private initiative because of too great an extension of the Federal Government; others, the effects of yellow periodical literature in some dreadful form; still others, the rule of a plutocracy—some are afraid of the President, some are afraid of Mr. Hearst; and so on.

All these forms of fear exist; and, if a man go about looking for things that people are afraid of, he will find a surprising number of ghosts and skeletons and economic theories. Some are afraid of poor men and some are afraid of rich men, some are afraid of Chinamen, some are afraid of Negroes; some are afraid of the currency, and some are afraid of the increase of gold—there's no telling what shape even a little fear may grow into when you encourage it and fondle it and give it a preference over all the other fears in the family.

If somebody had the power to force both English and American writers of periodical literature to read the social and political history of the United States with thoroughness, we should have less gloomy writing. Fears fade away before even a short view backward. A dark way may be ahead of us, infested with robbers and ghosts; but it gives the timidest traveler courage to know what dangers we have passed with tolerable safety. Men with intense problems in mind magnify danger—especially if they are writing men and not doing men. Put this test to yourself and to your gloomy prophets: would you rather have lived at any preceding

time than to be alive now, or would you now rather live in some other country than our own? If not, go cheerfully about your business and quit reading the yellow literature of gloom; and your political nerves, if you have political nerves, will gradually become quiet, much to your comfort and to the comfort of your associates.

THE REASON FOR PUBLIC UNEASINESS

THE public nervousness that makes some men afraid comes from an imperfect understanding of present forces. This is a dramatic period of our development. We have rushed forward in our vast and swift material growth faster than we have provided for the regulative or even the police powers of government. Our governmental thought is yet done by the old standards; but our industrial and even our social thought and conduct are by a new standard—the standard of the new measures and powers of wealth, of new achievements, of new economic machinery. The industrial state has far outrun the political state. New privileges have sprung up, even new classes and new conflicts.

This explains the clash that seems to hint of anarchy; and, in the momentary confusion of thought, the loudest voice gets the best hearing. The man who writes in capital letters has the most readers. The man who discovers a new sin against the public welfare makes the greatest sensation. The man with the most radical proposal gets the public attention—for the moment. It seems a time of volcanoes and earthquakes.

But the truth is, the people, the government, public opinion—in a word, the forces that govern a democracy—are just learning the meaning, the lessons, and the dangers, of our newly organized industrial life. There were no laws, for instance, touching wireless telegraphy. So there have been no adequate laws touching many forms of activity that have come with the growth of railroads, with the prodigious rush of city life, with the new problems of industrial organization. Political thought has lagged far behind.

And in its first efforts to adjust itself to a new set of conditions, the misfit brings a sort of despair. Can the people ever regain their individual liberties, the old wide, free, range of opportunity, the simple life and the straight thinking of a rural democracy? Are our new masters not tyrants instead of leaders?

A generation hence the historians will find this confusion of our thought and of our plans as interesting a subject as there is in our whole history; but they will see that it was as natural a stage in our development as any other stage was. For civilization does not advance uniformly, as the ranks of an army on parade, but in zigzag ways as an army makes progress in battle. Public opinion is now the advancing and aggressive force and in its zigzag way it is trying to overtake, to regulate, and to coördinate itself with, the new forces of industrial life that have within a generation made the world in which we work a new kind of world. When the political, or social, state catches up with the industrial state and coördinates itself with it, we shall again think in an orderly way, and men will become less "nervous."

ARE GREAT FORTUNES DANGEROUS?

IN A SPEECH made at the laying of the corner stone of a public building in Washington, President Roosevelt said (it was the absurdly discussed "muck-rake" speech):

> As a matter of personal conviction, and without pretending to discuss the details or formulate the system, I feel that we shall ultimately have to consider the adoption of some such scheme as that of a progressive tax on all fortunes beyond a certain amount, either given in life or devised or bequeathed upon death to any individual—a tax so framed as to put it out of the power of the owner of one of these enormous fortunes to hand over more than a certain amount to any one individual; the tax, of course, to be imposed by the National and not the State Government. Such taxation should, of course, be aimed merely at the inheritance or transmission in their entirety of those fortunes swollen beyond all healthy limits."

This was an innocent, even a commonplace, declaration; but it was received in many quarters as if it had been an eruption of Vesuvius or a Californian earthquake.

The two approved and common ways of taxing fortunes, in addition to the usual forms of taxation, are by an inheritance tax and by an income tax. Both these are imposed in Great Britain and in other European countries. Both are imposed, too, by some of the states of the Union. New York, for example, puts a tax on inheritances; and some of the other states levy an income-tax. An inheritance tax was levied by the Federal Government to provide revenue for the late

Spanish war. The income-tax enacted by Congress in Mr. Cleveland's last administration, was declared unconstitutional by the Supreme Court.

The President did not specifically mention these taxes in his general reference to the subject; but these are the forms that national as well as state taxation of fortunes must take whenever levied. And there is no sound objection to these forms of federal taxation if they could be so enacted as to secure the approval of the Supreme Court.

Mr. Roosevelt, in all his activities, has not directly insisted on a revision of the tariff. But, if he should elaborate and make definite this general suggestion of the federal taxation of inheritances and (if possible) of incomes, he would open the way for a real tariff revision. For, whenever a large revenue can be got in this way by the Federal Government, then the tariff will come up for serious discussion. It has been kept in the background all these years because the Government must have the revenue that comes from it. If by this method or by any other, Mr. Roosevelt should, before his term ends, encourage such an agitation, he will have touched every nerve in the body politic; and for the pain of the touching, the tariff may be likened to the sciatic nerve. But his general declaration set quite another line of discussion going —the limitation of fortunes and (by inference) the danger from great fortunes to the public welfare. This is an ill-adjusted economic world in which individuals may within a few years amass hundreds of millions—that seems clear. Yet, so far as we have yet gone, it is not the very great personal fortunes that have done most hurt to the public welfare. It has been rather the aggregations of capital under corporate form; for the corporate form has permitted irresponsible and harmful acts of which individuals could hardly be guilty and escape punishment. It is, in other words, the misuse of wealth and not the mere possession of it that has done harm.

It ought in all fairness to be said, in this time when it is popular to hound all very rich men, that they have nearly all proved that a time comes in fortune-building when a heavy personal responsibility is developed in them, and they give away large parts of their income with a sincere effort to bring good results. When it is fashionable to curse the very rich, it is just at least to be fair to them

In general our experience seems thus far to have developed no grave dangers from great individual fortunes, but very decidedly to have developed grave dangers from the irresponsible corporation management of aggregated capital.

THE DECLINE OF STATE GOVERNMENTS

IN A RECENT speech in the House of Representatives, Mr. Sherley, of Kentucky, said:

"What is happening in every state of the Union to-day? The state legislatures, the state governments, instead of being virile and efficient, are becoming anything but that. State officials do not want to use the power of their state governments because it means state taxation to pay for its exercise, which the people have to pay directly out of their pockets, and so you find officers of state governments charged with these matters coming up to the National Government to ask it to do what it is their duty to do, so that they be relieved of the burden and the states relieved of the cost. I believe it was intended that the individual states of America should be sovereign states, keeping at home among the people 90 per cent. of the things that affect life, liberty and property. I believe the safety of the country lies in keeping such government at home.

"But it is a modern tendency to come to Washington because it is easier than going to the different states; and it has gone so far now that we have the doctrine proclaimed that whatever is big, because it is big, must be solved by the National Government. You will swamp your government. You will destroy a representative government in the true sense of the term if you insist upon going along this road."

That is the truth, and every man who has any knowledge of our governmental methods knows that it is the truth. But the most frequent criticism of this tendency to overburden the National Government looks for a remedy at the wrong end of the trouble. The complaint most often heard is that the National Government is continually usurping the powers of the state governments—that there is a continuous and rapid centralization of activities at Washington. There is such a centralization; but the evil will never be stopped by criticism of congresses and of presidents. Nothing will be done, perhaps little can be done, at Washington to stop this tendency.

The place to stop it is at the state capitals themselves The persons to stop it are the persons who conduct the state governments and the people themselves. Work that overburdens the National Government is carried to Washington because the state governments will not do it; and it is members of Congress and the people who carry it to Washington. The ideal condition of political activity would give us busy state capitals and a dull and quiet national capital. It is the revival of power and of activity by the state governments that is needed. Then the National Government would have fewer temptations and fewer opportunities to go beyond its functions. Now it has to undertake work that the local governments ought to do; and that is the beginning of the trouble.

The political party that shall stir up the states will do more toward restoring an equilibrium of duties than the party that simply cries out against Washington. The centre of the trouble is the cowardice and inertness of state opinion and of state leaders.

A LITTLE TARIFF EARTHQUAKE

THE Speaker of the House, Mr. Cannon, has been quoted as having written to a friend:

> "The desire for a change which exists in the common mind will drive the Republican party, if continued in power, to a tariff revision. I do not want it, but it will come in the not distant future."

This was written before the San Francisco earthquake and, of course, before the discussion arose of admitting material free to rebuild that city. This proposition was one of those unexpected events that caused many men to play the part of Mr. Facing-both-ways. Help the city? Of course, everybody will do every possible thing to help San Francisco. Well, if it help a single city to remit the duties on building material, might it not help the whole country?

The free-traders have not been slow to recall the fact that it was the pressure of starving men, and not the arguments of Cobden, that brought the repeal of the corn laws in England. The pressing needs of a single city will hardly cause a radical fiscal change in the United States; but every discussion of the tariff does put the defenders of the present schedules awkwardly on the defensive; and Mr. Cannon's prophecy, like most of his political forecastings, is pretty sure to come true. Massachusetts and Iowa are Republican centres of disturbance at all times, and there is, of course, throughout the party a large body of opinion which favors the modification of duties but not the eradication of the protective principle.

The Democratic party, which won its only national victories in recent times on the demand for a radical revision, seems to have lost its courage and its conviction. Who knows whether the South itself would now be solid for a radical reform of the tariff? Although, therefore, every mention of the subject causes the "stand patters" some uneasiness, there yet seems to be no aggressive demand for radical reduction; for a really earnest demand of that sort could not have been so completely smothered all these years. Although the "stand patter" is nervous, the radical reformer of the tariff does not seem to be in earnest. A "lady-like" reform, therefore, seems more likely to come, when any change comes, than a really vigorous assault on the protective principle—unless, indeed, a real man of the opposition, a kind of Cleveland, should come forward.

AN END TO FRAUDULENT DIVORCES

THE Supreme Court has rendered a decision in a divorce case—with the common division of the court of five assenting and four dissenting opinions—the gist of which is that a divorce granted in a state of which both parties to the marriage are not residents, may not be lawful in another state in which one of them lives. Justice White wrote the majority opinion that

> "If one government (that is, one state) in virtue of its authority over marriage, may dissolve the tie as to citizens of another government, other governments would have a similar power, and hence the right of every government as to its own citizens might be rendered nugatory by the exercise of the power which every other government possessed."

This hits a hard blow at the divorce methods of the South Dakota "colonies," where one party to a marriage gets a technical residence and secures a divorce from the other who is a resident of another state; and it is likely to put an end to this scandalous habit. It will give an impetus, too, to the movement for uniform divorce laws.

In a dissenting opinion Justice Holmes

called attention to the great confusion that this decision will cause because of its *ex post facto* character. Many marriages of divorced persons already made may now be illegal and children of such marriages may therefore be illegitimate. While the *ex post facto* effect of the decision will cause much trouble and confusion, the influence of the decision will be entirely wholesome in the future.

A husband or a wife who establishes a technical residence in Rhode Island or in South Dakota or in any other state whose divorce laws offer the least resistance, and secures a divorce from a wife or a husband who is not a resident of that state and will not go to appear as defendant, in person or by counsel—such a divorce is lawful only in the state where it was granted and in other states which have correspondingly lax laws. It will not be good in all the states nor in most of them. A "safe" divorce must rest on a decree granted where both parties to it are residents and where the defendant has been properly served or has appeared.

The wholesome effect of the decision will be to make essentially fraudulent divorces unsafe. What an amount of scandal it will prevent!

PROGRESS ON THE CANAL

IN ONE respect we are getting on mighty well with the Panama Canal—our writers keep steadily at work on it. The magazine that has not sent a special writer to tell the truth and the whole truth about things on the isthmus is not worth its salt. There is no danger, therefore, that the canal will be finished some night before we hear of it. And most of these gentlemen who have gone to investigate and to describe—each trying to find something that his predecessors overlooked—agree on all important matters; and they are good enough to permit us still to believe in the reports made by Secretary Taft and the Chairman of the Commission, Mr. Shonts.

From these reports we learn that the work is going forward, that the sanitary problem has been solved—at any rate that the health conditions are becoming as good as they can well be made in that unhealthful region; that 23,000 laborers are employed; that in a few months they will be moving a million cubic yards of earth a month; and other engineers compute that at this rate it may require twelve years to do the job. But the "dirt" is now really "flying"; and the administrative work is done well.

The "type" of canal has not—when this is written—been decided; but the work does not need to wait for that decision. There is hardly a doubt that a lock canal and not a sea-level canal will be chosen, in spite of the more or less remote danger of earthquakes. Nor does anybody yet clearly know what it will cost or when it will be finished. We have learned that it is an enormously more costly and difficult task than it was supposed to be when we first undertook it. But there is not the slightest doubt that we shall cut it as soon as it can be cut; and the public will be kept informed of the progress of the work almost as minutely as if it were within the United States.

THE ENACTMENT OF INSURANCE REFORMS

THE tide of public earnestness swept through the New York Legislature laws that carry into effect, in New York, all the radical recommendations of the Armstrong Investigating Committee.

The new features of this legislation are not technical life insurance features but general political legislation. These acts forbid corporations making any contributions whatsoever for any political purpose. This prohibition applies to railroads, trusts, banks, and all other corporations except those specifically organized for political purposes. There is also a requirement that any one, whether a lawyer or not, who is working to influence legislation shall file with the secretary of state the name of his employer and the nature of his services. The corporation which employs him must make a sworn public statement of the exact amount it has paid.

In order to prevent misrepresentations and deceptive statements the penal code is amended so that contradictory statements under oath are presumptive evidence of perjury. This will prevent one statement to the tax department to secure lower taxes and another statement to the insurance department for uses as an advertisement. This also applies to all corporations.

The essential feature of the new insurance code is the compulsory publicity and the resulting opportunity for competitive comparison by the general public of the management of the different life insurance companies. By com-

pelling all companies to use the same policy forms, the premium rates are readily comparable. By requiring all dividends to be apportioned annually, the comparative results are quickly ascertainable. By limiting the agent's commission to the "expense loading," the cost of new policies is not saddled on the old policyholders. By restricting the use of the assets, life insurance investments are put in the same conservative class as savings bank investments.

The radical features of the changes are, therefore the amendments to New York's General Corporation law, its Legislation law, and its Penal Code. The changes in New York's insurance code are a return to the old law as it was before there was an insurance lobby, a replacement of the virtues of the old law for the excrescences which the distribution of boodle funds at Albany had inserted. This old New York insurance code forbade deferred dividends for a longer period than five years. It restricted investments to real estate mortgages and public bonds. It provided for full accountings and it gave every policyholder the right to sue in the court.

Several companies have had in practice for years the same principles which the New York law now lays down. They have, in fact, conducted their business at a smaller ratio of soliciting cost than the new insurance code allows. The changes are to their advantage as well as to the great advantage of the insuring public. Instead of a reckless, expensive rush for new business and the pushing of so called investment policies to the disfavor of straight life insurance, the New York law now leads the way for a restoration of the life insurance business in the United States to what it should be. It remains, however, for the other states to remodel their insurance laws after the New York pattern. They must include the general provisions against corporate campaign contributions, secret political lobbies, and corporate perjury.

THE RUSSIAN PARLIAMENT

THE beginning of the Russian Parliament on May 10, with much pomp and with much disappointment, too, may be a step backward or a step forward in Russian freedom. The world will have to wait a while to be sure which it is.

The "fundamental law" granted by the Czar, which is the constitution under which the Parliament exists, is vague. Most of the rights that it grants are modified or may be withdrawn; and it is regarded, according to the fears or the hopes of those who study it, as a mere pretense or as the real beginnings of freedom. The Emperor retains supreme control of the army and of the navy and of the budget. Control of the army and of the navy is usual in constitutional monarchies especially where the monarchs are strong; but control of the budget is regarded as suspicious. The Emperor, too, may declare cities or districts under martial law at his will. This may be only a necessary method of restoring order in a turbulent time or it may be a method of completely taking back autocratic power. Events only can show. The "Senate," which is not an elected body but only the council of Empire appointed by the Emperor, must pass on the constitutionality of every law enacted by the Duma before it can go into effect. The Emperor's appointees, therefore, have an absolute veto power. Freedom of residence is not granted absolutely but only "under existing regulations," which are, of course, at present prohibitory of freedom of movement. The constitution permits the Emperor at any time to dissolve the Duma, nor can he be forced to reconvene it at any given time.

Thus it is obvious that this first move toward a constitutional government may go far or only a little way; it may be the begining of a real constitutional government or it may be a mere sop to discontent. The autocracy may regain power after appearing to abdicate. The best opinion is that the Emperor himself is sincere, but there is profound distrust of the old bureaucratic party and influences.

Yet it is hard to see how a different beginning could have been expected. If there is good reason to distrust the bureaucracy, there is also good reason to distrust the Russian people and their leaders. They have had no experience of freedom; and, so far as the outside world knows, they have developed no strong leaders. The Russian temperament is emotional and impractical. It is not certain that popular government would be successful if it were thrust on them. If they have the moral and political qualities to profit by freedom, they will probably win it, inch by inch, after this vague beginning. If they do not show such qualities, the Parliament

will become only another piece of machinery in the hands of the autocracy. The beginning of the Parliament, therefore, is probably the beginning of the real fight for freedom. The struggle may be an orderly one—a struggle of moral force; or it may be a violent struggle. But there has been at least this gain—the right of the people to some voice in their government has been won; and this cannot be taken away unless the people show themselves incapable of a struggle for ultimate and substantial self-government.

FOR AMERICAN INFLUENCE IN CHINA

IT IS a good suggestion made by President James, of the University of Illinois, that our Government send an educational commission to China, with the purpose of inducing the Chinese authorities to send to our schools and colleges the young men that go abroad to be trained under Western methods and institutions. The suggestion has been very cordially received by the press, and it has common sense to commend it.

China is waking up—more slowly than Japan awoke; but within a generation very many changes will come, and many of them will be brought about under the direction of Chinamen who have been educated abroad, as the great changes in Japan were similarly directed. This bare statement brings a long list of suggestions to every thoughtful mind, and it carries instant conviction of the wisdom of President James's suggestion.

There are many Chinese students in foreign countries besides the five thousand or more who are said to be receiving instruction in Japan. They go chiefly to England, France, and Germany. They avoid the United States chiefly because of the rude enforcement during past years of our Chinese exclusion law and of the prejudice which they naturally think that we feel against them. Yet, if we desire the good will, the trade and an intellectual and industrial influence in China, there is no other way to get these things quite so directly as by welcoming and training the men who a few decades hence will exert a strong influence there in governmental, educational, financial, and industrial ways.

The opportunity is the greater because our friendly attitude to China (except for our too harsh administration of the exclusion law) has been in recent years more important and helpful than the attitude of any other country. Our service in saving the Empire from partition and in limiting the area of the Japanese-Russian war, and our generous treatment after the Boxer uprising—all these friendly acts have been appreciated by the ruling classes. And yet we have permitted, if not provoked, a boycott of our wares which has done and is doing far greater damage in arousing a Chinese prejudice against us than it has done in injury to our commerce. A wisely chosen commission that should go on such a friendly and helpful errand might do a far-reaching service to the Chinese, to us, and toward a commercial and intellectual development of the Empire that should be in close sympathy with American methods and aims.

EUROPE—AS THE EMIGRANT FEELS IT

IT IS no wonder that people of the unprivileged classes of Europe are flocking to our shores by the millions. Compared with Europe our country is almost a virgin country. Compared with European life for the mass of men, our life, outside of our few large cities, presents an unlimited and the most varied wealth of opportunity. If an American who is dissatisfied with American conditions were for a few years to lead the life of a European peasant, learn the peasant's restricted outlook and opportunity, and were then to come to the United States, even with only a few hundred dollars in his pocket, he would look upon our shores as the fairest land under Heaven, and welcome American residence as a sick man welcomes health.

The area of Europe is only a little greater than the area of the United States—3,800,000 square miles against our 3,500,000; but Europe's population is four times ours. Europe has about fifty times as many men under arms as we have, and spends, in something like the same ratio, for their maintenance, and at a very much greater rate for her navies and at a still greater rate for the maintenance of her governments and her privileged classes.

Think of our territory divided into parts corresponding to the United Kingdom (about the area of New York), European Russia, Germany, France, Austria-Hungary, Italy, Spain, Norway, Sweden, Turkey, Holland—there are half a dozen other States, all with their kings and courts, except France and Switzerland, and all with their burdensome

systems of defense. Nearly all have their costly restrictions against trade with all the rest, whereas we have free trade from one ocean to the other, a common language and one kind of government, which, with all its deficiencies and extravagances, is ideal in comparison with the bewildering and impoverishing burdens of European rule. Under a system parallel to Europe almost every important city that we have would be a capital of a nation, with all the cost that that implies and with all the restrictions on private opportunity that great privileged classes and costly governments and armies impose.

And the European situation, uncommonly calm as it now is outside of Russia, is yet the cause of constant and profound uneasiness by all statesmen. The late Marquis of Salisbury said not many years ago:

"You notice that on all sides the instruments of destruction, the piling up of arms, are becoming larger and larger. The powers of concentration are becoming greater, the instruments of death more active and more numerous, and are improved with every year; and each nation is bound, for its own safety's sake, to take part in this competition. The one hope that we have to prevent this competition from ending in a terrible effort of mutual destruction which would be fatal to Christian civilisation—the only hope we have is that the Powers may gradually be brought together to act together in a friendly spirit on all questions of difference which may arise, and till at last they shall be welded in some international constitution which shall give to the world, as a result of their great strength, a long spell of unfettered and prosperous trade and continued peace."

Such an international constitution may come, but it is not yet in sight. Friendly as the nations now are, there are few signs that such a union can be formed at any time that we can foresee. Another Englishman, Lord Avebury, writing in a recent number of the *Nineteenth Century*, declares, in a remarkable review of the state of Europe, that "revolution may not come soon, not probably in my time, but come it will, and as sure as fate there will be an explosion such as the world has never seen."

There is, no doubt, a dim premonition of this felt by the European peasantry, such as some animals have of a coming storm; and the United States is a place of safety for them and for their children. The coming of such as make good, thrifty citizens is good for us; but out of the millions that now swell our population how many bring moral and political diseases of the Old World—how shall we know?

THE COLLEGE DEGREE AND AN HONEST SUGGESTION

AT COMMENCEMENTS, which are now on us, one is likely to hear a good deal about the advance of education, and yet nowhere else have ancient prejudices such a steady hold as in universities. Take for example the degree-giving habit. The A. B. degree (which American colleges have tried in vain to differentiate by a variety of explanatory letters such as Ph. B. or B. S.) was borrowed from the English universities by the New England colleges, which were themselves modelled on Oxford and Cambridge. Although from the very beginning our American universities departed pretty fundamentally from their English ancestors, they have retained the inevitable degree. Formerly this mediæval badge meant something to all educated men: it indicated, at least, that its possessor had spent four years in a cultivated and learned society, where he had been brought more or less in contact with two dead languages, a little stale philosophy, and some higher mathematics. But, since the advent of the elective system and German ideals of scholarship—not to mention new branches of education—it no longer has any special significance to any body of men.

II

Nowadays a college graduate has spent from two to five years in an institution where he may have eaten a substantial intellectual meal, or may have tasted instead a vast number of tempting educational dishes—or merely had a good time and hired a coach to do the required thinking. He may have entered college after a thorough training in a good fitting school, or he may have been "accredited" by a perfunctory school-teacher, and have been really unprepared for any higher studies. Under such conditions the conferring of degrees is a piece of scholastic buncombe, endeared by tradition and of some supposed commercial benefit to the recipients.

Anyone who is familiar with our colleges knows that the units of instruction, upon the performance of which the getting of degrees depends, are of very various worth and difficulty. There is no human method of estimating properly their respective values in

the curriculum. And it is coming more and more to be the case that colleges give their degrees for work performed elsewhere, which they estimate roughly and accredit to the students. So far as the commercial consideration for holding to degrees is concerned, outside of academic circles nobody cares whether a man has a bachelor's degree or not, unless he wishes to teach. And to secure any good position in teaching the college graduate must have the doctor's degree, which is given by respectable institutions only for very real accomplishments.

It is natural enough under these circumstances that young people in college should confound the taking of a degree with the getting of an education. But what is really more lamentable is that American colleges seem unable to put their stamp upon their graduates in some more enduring manner than by giving them little rolls of parchment and the right to add some capital letters to their names.

III

A remedy for this state of things is not hard to find. Let the university or college issue to every student leaving its doors a document which shall be an exact and concise statement of the term of actual residence, and the amount and the nature of work performed by the student under the supervision of that institution. It would require scarcely more parchment than the present degree to provide a record of the student's work that would mean something. In it should appear a brief description of the subjects pursued, the names of the instructors, the amount of class or laboratory work done, of the grades given by examinations in the respective courses, all countersigned by the proper college officer. Thus it would be a concise summary of the educational history of the student.

There are certain obvious advantages of such a system, besides its honesty. It would permit the student in search of the best instruction in his field to move freely from one college to another. To the young man looking for work such a document would have real commercial value, provided that his studies had had anything to do with the job he was seeking. And it would enable those aiming to enter the professions to begin their professional studies just as soon as they had completed the courses prescribed by the faculties of the professional schools.

Of course there would be a sentimental outcry against doing away with the time-honored degree. Colleges are timid, always fearful of a possible loss of patronage. But a frank recognition of the emptiness of the bachelor degree would appeal to the best sense of the community. It would tend to eliminate the loafers in college, because parents would no longer have the excuse of maintaining their sons in idleness through four years "for the sake of the degree." College would become more and more a part of the business of life, and a place where something cannot be had for nothing.

REDISCOVERING RURAL EDUCATION

THE Conference for the promotion of Southern Education, which has been held annually and in a different state every year—in North Carolina, in Georgia, in Virginia, in Alabama, in South Carolina, and this year in Kentucky—has done as much as any other one agency, perhaps more than any other, to set the educational forces in the great rural areas at work on fundamental problems. This is the same as to say that the teacher must attack real problems and not merely book problems in training the children of the soil; and, by any right measure of life, we are all children of the soil.

At first sight it might seem that a great public meeting made up of men and women of all parts of our Eastern country, who have nothing in common but the patriotic impulse to set education at its right angle to life, was not the best means to bring about such a result; for these conferences are not pedagogical bodies but are made up of teachers, college presidents and professors, public men, writers, editors, men-of-affairs and women of public spirit. But this composite membership has turned out to be the very strength of the "movement," if it may be called a movement.

The fundamental proposition is so obvious that it may easily escape attention—that every child in the country should be trained—*trained*, mind you, not merely sent to school—and trained to know what the earth is good for and how a dignified and independent life may be lived on it, with all the qualities that we call common sense brought into play. Yet this is in no way a movement to promote

agricultural training as distinguished from training for any other pursuit. It is a movement to train the children of our great rural areas for whatever careers they may seek.

Nor is it applicable to the Southern States in any sense in which is it not applicable elsewhere. These conferences have been held in the South only because these states are the great rural states of the East, their educational work has been backward, and the spirit and ambition of the people are eager and admirable. And the strides that educational ambition and agitation have made and are making there are revolutionary.

At the Conference this year in Lexington, Ky., emphasis was laid on the teaching of the farmers who now occupy the land—teaching them on their own land by demonstrations of what right methods of culture will do. If you stop to think of it, the only place to teach agriculture is on the land and the only persons that you can be sure will profit by such teaching are the men who are now tilling the land for a living. But nobody seems clearly to have found out these obvious facts—and acted upon them—until a very few years ago.

We have confused "Education" with almost everything under heaven, until a simple and obvious fact like this, which must have been known from the beginning of the world, seems like a new discovery. In general, it seems to be a very good idea for earnest men and women of all callings to turn their attention to the training of the masses; and such more or less miscellaneous conferences, if they be as dead-in-earnest as these held in the South, would bring good results in any part of the Union.

PROSPERITY'S HUMAN WASTE

A QUIET scholar went to Palm Beach Fla., last winter to rest, and he found it a place where men "pursue expense regardless of pleasure." A cultivated man and his cultivated wife, also quiet folk, went a little while ago to one of the great hotels at Atlantic City, N. J., and they wrote to their friends: "We did not know that there were such people in the world as we see here—spending, spending, noisily spending." They were obliged, in order to escape the glare and racket, to go somewhere else to find congenial quiet.

These good seekers of rest made mistakes in choosing these places—perhaps that is the only moral worth drawing from their experience. They reaped the reward of their simplicity. Yet there *is* something else to say, for visitors who come to see us from abroad are already saying it: our commercial prosperity has outrun our growth in good taste. "You may see what the Lord thinks of money," said a sound philosopher, "by observing the kind of persons to whom He gives it." But even this is not all that is to be said.

For, although we have plans on foot to help the blind, schools to train the mute, societies to tame the Indians, organizations to lift the Negroes, and missionaries to convert the heathen, what agencies have we for changing the "guests" of the fashionable hotels at winter and summer resorts into modest American folk? The ways of civilization are inscrutable; and it may be that the race-track and Wall Street are meant to reduce such of them to poverty again as survive immoderate indulgence in automobiles. The fatty diseases of malnutrition, too, find them good prey. *Somebody* must continue to feed diabetes, motor-cars, and gambling places, else the yellow press would perish and the preachers would have no subjects for sermons, in the intervals between volcanic eruptions and earthquakes; and virtue would become unattractive for the lack of vice to lord it over.

This class of persons, fortunately for us, can never become an hereditary evil, for they perish; or their fortunes take wings and the diamond pins of this generation give way to flannel shirts the next. But every generation of prosperity breeds its own soft overcrop of decay. The prodigality of our democracy is responsible for them as the prodigality of nature is responsible for noxious weeds. For our great garden is not well kept and our soil is rich and its growth rank.

Doubtless the best thing to do about them is to do nothing—not even to worry about their waste of money. Their waste of money, in fact, is the least silly thing they do, for the money is in constant flux and serves its purpose. The sad fact is that these persons waste themselves on what they conceive to be pleasures. While all waste of life is tragic, we cannot conceive either of nature or of human society without its tragedies. A democracy is like nature in that it has deserts

and jungles and so great a profusion of life that a multitude of its creatures, born merely to perish foolishly, are a part of its plan.

THE DIME NOVEL AND THE SOFT NOVEL

IF IT be true that the dime novel has passed, as some librarians and publishers report, it is hard to decide whether to weep or to rejoice. Dr. J. Stanley Hall, the eminent psychologist, is, in a way, a defender of the stirring story of adventure for youth. Blood-and-thunder ought to form a part of a boy's imaginative exercise. Certainly a good word could be said for the hardy and adventurous qualities of the generations of Americans whose boyhood was more or less fed on the dime novel. The heroes worked hard. They played fair. They were alert. They had both daring and imagination. And the good hero always triumphed. The villain was shot. The best of these yellow backs were not immoral nor soft. Perhaps the worst that can be said of them was that they were silly. But, if boys' tastes have changed or if dime-publishers now find other kinds of books more profitable, we can survive the passing of the dime novel. There is no lack of adventurous things to read either for boys or men.

But in the changing fashions another form of literature has come that is worse than the dime novels ever were; and its victims are women. If a thrilling story of frontier life made a cowboy of a lad now and then, the "society novel" probably plays worse havoc with the women who loaf in Florida in winter and at Atlantic City in summer and with girls who regard the life of the loafers as the ideal life. For these silly stories are soft, and if we must have either, blood-and-thunder is better than softness.

THE ERUPTION OF VESUVIUS

THE great eruption of Vesuvius probably caused the death of as many persons as the earthquake and the fire in San Francisco; but it was almost forgotten by the American public because of the distress to a very much larger number of victims and because of the dramatic destruction of a great city. Several villages that lay within the destructive range of lava and ashes were destroyed, but they were not villages of historic importance. More lost their lives by the falling in of a roof of a church from the weight of ashes than in any other way. The railroad to the crater was, of course, destroyed, and the shape of the crater itself was completely changed. Naples suffered from a great fall of ashes, but no permanent damage was done to the city.

The hero of this eruption is Professor Mateucci, the eminent scientific observer who kept at his post in the dangerously exposed observatory from which he has long studied the volcano and the phenomena of all its moods. He risked his life but fortunately escaped injury; and he had an experience with volcanic activity such as no man ever before had.

A NEW ERA IN LIFE INSURANCE

THE reports of all the life insurance companies doing business in the United States indicate that the exposure of the perversions of the great companies have had the effect not only of benefiting the public but of greatly increasing the business of the many honestly and economically managed companies. Of the seventy companies which issued life insurance policies excluding the "industrials," forty-six report increases of insurance for the last year of more than 194 million dollars. Of the companies which report losses nine are New York companies, and of the 194 million dollars of losses more than nine-tenths were experienced by the New York companies and four-fifths was reported by the "big three," the Equitable, the Mutual and the New York Life.

Since January 1, 1906, when the figures for the annual reports were closed, the same tendency has been even more strongly shown. New policyholders are insuring in the companies which public investigations and personal inquiry of policyholders have shown to be selling life insurance at the lowest cost. Other policyholders have been transferring their insurance from some companies to others. The result is a shifting from the three largest companies to the fifty smaller companies and a distribution of insurance among them according to local conditions and the results of past experience.

The greatest falling off has been in the Equitable— more than 83 million dollars. Next to that has been the Mutual of New York with a loss in new business of 48 million dollars. The New York Life has lost less. Besides these fallings off there have been losses in these

companies from surrenders and lapses which are larger in amount that ever before.

On the other hand the New England, the Pennsylvania, and the Western companies, in general show substantial gains. No one company has monopolized the increase, but there has been a fairly even distribution. The losses of the big companies have of course swelled the gains of these smaller companies.

There is also a strong tendency to take out term-insurance and straight-life policies instead of endowment, deferred-dividend, and other forms of investment policies. Since the same sum will buy a much larger term or straight life insurance policy than an endowment or investment policy the payments of policyholders will secure a very much larger volume of actual insurance.

The discriminating intelligence of the insuring public is also demolishing the expensive agency systems. The commissions paid by the Mutual of New York to its agents on new business for the first three months of 1906 were about one-third as much as for the corresponding months of 1905. There is also a falling off of a third in the renewal commissions. The Equitable's commissions to agents on new business have been cut in two. As one result of this many agents are seeking other employment. One type of insurance agent is finding his vocation gone. The other agents who consider first their own reputations and the building up of an established business by giving the most value for the money and by selling those policies which are best for the policyholders, will now reap the results of their integrity and energy.

Instead of the exposures and the consequent public enlightenment doing life insurance harm they will do it good. But hereafter the successful companies will not be investment bureaus or shelters for syndicates or allies of stock speculators. The field for pure, straight life insurance was never better than to-day. The people are the greatest gainers but every life insurance company which is honestly and economically conducted will get benefit from the popular awakening.

THE HOPE FOR FREE ALCOHOL

THE act of the 59th Congress that may possibly result in an even wider benefit to the country than many that have attracted more public attention is its start to put commercial alcohol on the free list. The bill passed the House, and at the time of writing it is receiving favorable treatment in the Senate, though now as formerly oil and coal interests may again block what would be a widespread boon. For with the import tax removed, every farmer might manufacture his own source of light and heat. The day of the universal automobile would be hastened. Every village could have its competitors of the Standard Oil Company.

There are two kinds of alcohol, wood alcohol and the alcohol distilled from grain, potatoes, beets, and other forms of vegetable matter which contain starch and sugar. Hitherto wood alcohol has not been taxed, but grain alcohol has had to pay a tax of $2.08 a gallon, which has made its use too costly for any other purpose than making intoxicating drinks and medicine. Yet it can be made very cheaply. From a bushel of small potatoes more than a gallon can be distilled. With improved processes, it can be produced from potatoes, sugar cane, or refuse beets at a cost of less than 10 cents a gallon. This is less than a quarter of the cost of wood alcohol.

The grain alcohol is almost a perfect fuel. It can be made as little dangerous as high proof kerosene. It gives more heat than kerosene without a disagreeable odor. All explosive types of engines can be adapted to use it to better advantage than gasolene. Its cost of production is less than the market price of gasolene, and it will furnish more power.

The process of distilling is simple, and the apparatus is not expensive. Any farmer could buy a small plant and convert all his low grade or spoiled grain, his small potatoes, and his refuse beets, and even his corn stalks, into alcohol at little expense. The use of power could be made universal by the common production of cheap alcohol and the use of alcohol engines.

The bill before Congress does not propose to alter the tax on grain alcohol in the shape of intoxicating liquor but to provide for the denaturizing of it by charging it with some poisonous and odorous ingredient so that its use as a beverage will be dangerous, without any impairment of its use in the arts or for light and power. The rectifying of such alcohol will be as much a crime as the illegal distilling of alcohol for drinking purposes is now.

Our high tax on alcohol has given Germany

a great advantage in manufacturing chemicals. Many medicinal preparations such as liniments and chloroform require alcohol for their preparation. In the manufacture of hats, varnishes, paints and other great industries cheap alcohol would put the United States in a position to compete favorably with other countries. A cheap substitute for gasolene is desirable. Denaturized alcohol supplies it.

WHAT SORT OF STOCKS A PRUDENT MAN MAY BUY

[*The sixth article on the making of investments.*]

IN a previous article, The WORLD'S WORK outlined a method of semi-speculative investment in low-class corporation stocks, designed to increase the principal invested, rather than to yield revenue, or to give to the buyer a feeling of security in his investment.

It must not be thought that all stock investments are speculative. Many men all over the world have made their most careful and conservative investments in stocks of various corporations. In fact, there are several advantages to be gained from stock investments which are not to be found in bonds. The man who buys a bond of a corporation becomes merely a creditor of that corporation. The buyer of stocks, on the contrary, becomes a partner in the company—one of its owners, not one of its creditors.

In this country, the principal argument used by authorities on investment in favor of stocks as opposed to bonds is that the stocks are free from the personal tax. This tax varies from about 15 mills on the dollar to about 3 mills on the dollar. If one buys bonds and is willing to declare the full amount of his investment, he is asked to pay taxes in New York amounting to more than one-third of his entire revenue from a conservative investment yielding, say, 4½ per cent.

Of course, many men in the high-tax states do not pay taxes on the full amount of their investments. "Tax-dodging" is not an exception—it is a rule. Yet there are many who do not care to do it. Criticism was made of a recent outline in this magazine of a bond investment for the average man, on the ground that this investment could not be profitably made without dodging taxes. The objection was technically valid. It would, however, be equally valid to point out that the same amount of money could not be carried in the bank, or invested in chattels, or used in any of the ordinary pursuits of life without coming under the same restriction.

By the buying of stocks to yield the same revenue, the investor can clear his skirts of the tax-bogy. This is not dodging taxes. The corporation is supposed to meet all the tax liability that attaches to its stocks when it pays its own real-property tax to the state in which it came into being, and in which it operates.

Conservative investments in stocks for revenue and security are made in very large volume every day on the New York Stock Exchange and on similar exchanges all over the country. In even larger volume, they are made in private transactions throughout the world, wherever corporations exist. For it must not be thought that the corporations of immense size are the only corporations whose stocks are to be considered as careful investments.

The buying of the stocks of small companies no matter how good, should not be attempted except by those who are perfectly familiar with the business of the small company, in question. If a merchant, for instance, buys indiscriminately the stocks of brewing companies, street railways, milling companies, land companies scattered throughout the Union from the Atlantic to the Pacific he is courting trouble. He cannot, in the nature of things, be familiar with the business into which he has bought. This statement, almost

axiomatic, will serve the individual investor as a principle for such investment. If you are going to buy the stocks of small manufacturing companies consider carefully several things. The questions will be:

"What is the business into which I am buying? Shall I be merely a blind partner, or can I watch the business as it grows, or shrinks."

"How much are its stockholders permitted to know? Are there regular statements of earnings and conditions, or are we to be allowed to live along in a fool's paradise until the voice of the receiver wakes us from our dreams?"

"If I should be forced to sell, who would buy my stocks?"

"How long have dividends been paid, and how great are they?"

If these questions can be answered satisfactorily, there is nothing foolish about buying the stocks of manufacturing companies with which you are familiar. If to any one of these queries there is no satisfactory reply, be very sure that you are courting trouble in undertaking to become a partner—a dummy partner—in the company.

It is probable that if an inventory could be made of the stock investments of England and the United States it would be found that more than fifty per cent of these investments would be classed as "blind investments." There is hardly one small stock company out of ten that really tells its stockholders what they are entitled to know. It is possible to number on the fingers of one hand the industrial and manufacturing companies in the United States which tell their stockholders all the fundamental facts concerning the business of the year. The United States Steel Corporation is a brilliant exception. The American Sugar Refining Company, The American Tobacco Company, The Consolidated Gas Company of New York and many others of the leading companies whose stocks are scattered far and wide make public only the most meagre statements of their condition.

Here is the very first guide-post on the way to safe investments in stocks. Make your investment, small or great, in stocks of big or little companies, only in the stocks of corporations that tell you fully every year, in language you can understand, all the facts with regard to their financial condition, their earnings, the amount of cash on hand, and all the other fundamentals.

If that should be insisted on, the rest of your choice will not be difficult. For then your action will be intelligent. It will not be merely a gamble. It will not be taking the word of someone else. No average man would buy a thousand dollars worth of land that he had never seen, whose location he did not know, whose condition was indefinite, merely because he had heard of it from a friend, or because he had read about it in the papers. Yet thousands of men, day by day, pay out their money for stocks that represent to them properties of which they know absolutely nothing and of which they never can know very much.

"What classes of stocks fulfil these conditions? What corporations publish all the fundamental facts with regard to their financial condition? What stocks can I safely buy, and what revenue should I get from them?"

Standard railroad stocks undoubtedly rank first for the general investor. Many bank stocks are excellent. Stocks of loan companies, industrials, and mining companies should be bought only after the closest consideration. They should fulfil the minutest requirements of the catechism before they are even considered by the wise investor.

All these groups are subdivided into many classes. One of the first that should be considered is a very large class of railroad preferred stocks. They are entirely different in their nature from the railroad common stocks. The difference is a limitation upon the revenue they may receive, and upon the right which stocks have to share in the distribution of property in case the company should ever be wound up. This class of stocks, bought very largely by conservative people who do not wish to pay taxes, is worthy of somewhat detailed consideration.

Taking Baltimore & Ohio Railroad preferred stock as an example, examine the security closely. The amount of it is found to be $59,986,464, of which $37,680,000 is owned by the Pennsylvania Railroad. The "floating supply," therefore, may be reckoned at $22,000,000. The records of the Stock Exchange will show that it is not traded in to any great extent in large amounts but also that one may either buy or sell ordinary blocks of it from day to day quite freely. It is not, therefore, to be called a trading stock, but

has enough market to make it reasonably easy to sell on the call of necessity.

A further examination reveals the fact that this stock has paid dividends of 4% per annum since 1900, and that the revenue available to pay this dividend in the past four years has always been more than three times what was needed. It shows also that the common stock, nearly $125,000,000 has regularly paid 4% and 5% dividends since 1901, and is now paying 5%. The natural conclusion is that the stock is a safe investment to pay a revenue of $4 on every share each year under present conditions. The huge amount of common stock constitutes a safeguard, because any big reduction in revenues would show effects in it long before the preferred would be endangered.

It is discovered that the road makes public its earnings every month, and also a huge annual report every year, about October, covering the twelve months to June 30 of the same year. There does not seem any attempt to conceal important facts. It is also made clear that when the company issues new stock, or does any other thing that gives extra profit to the common stockholders, the preferred stockholders also have the same rights. This may amount to quite a bit. Recently, these stockholders received what are called 'rights," worth about $1 per share.

As to price, the investigation should be close. Going back to 1900, it is found that since the stock began to pay its full dividend it has ranged from 82¾ to 100 per share. Its average price is about 93. At present it can be bought for, say, $94 per share. At the average price, it would yield a revenue of about 4.35% per annum.

With all these facts before him, the investor can weigh the situation pretty accurately. The conclusions are pretty obvious. He will see at a glance that there is not any great chance for large profit in the investment. The price is about the average for the five-year period. The highest price on record would show him no wonderful gains. He would certainly not buy this stock for the purpose of making any big increase in his principal. On the other hand, he sees a safe revenue, a fairly marketable investment, a chance for a legitimate investor's profit perhaps within the next year, or two years—and, above all, as good a return on the investment as a conservative buyer has a right to ask.

There are many other investments of a similar kind. The preferred stocks of the Atchison, Topeka and Sante Fé, the Union Pacific, the Southern, the Norfolk & Western, the Reading road and many others can be taken and examined under the same tests. A few preferred stocks will be found, such as, for instance the preferred shares of the Milwaukee and St. Paul, and of the Chicago & Northwestern roads which are not limited as to income, but share in any increase in the common dividend over a certain percentage. In the case of the Southern Pacific preferred, the investor will find that the stock can be redeemed at $115 per share within a certain time. Many other peculiarities will be found in particular stocks.

The common stocks of the railways, the preferred stocks of the industrials and the stocks of companies that have but one class of stock are found in profusion. To every one of them the test should be applied, and applied very carefully. No stock should be bought without finding out not only the amount of the issue and the revenue, but how long that dividend has been paid, how the stock has fluctuated in the market over the past few years, how it has stood great catastrophes and panics, and what is the spirit of the management toward the stockholders.

It is not possible here to take up these questions in full. The single analysis used above will serve as a guide. Any man of average intelligence who asks all the questions implied in that examination will be able to draw his own conclusions. He will also be able to judge roughly whether or not this is the time to buy. It is not the purpose of this article to tell anyone to buy stocks now, or at any other time. Neither is it the purpose of this article to recommend any particular stock—but only to point out as well as possible the guiding principles in certain kinds of investment practiced widely and successfully in this and other countries.

There are thousands of business men throughout the country who hold stocks without wisdom or reason. If to a few of these men can be brought home the fact that a blind investment is neither wise nor business like, and is sure sooner or later to meet its proper end, the object of this article will have been in a measure achieved.

AN ARAPAHOE VILLAGE IN NORTHERN OKLAHOMA
The kind of life that is passing away

THE NEW STATE OF OKLAHOMA

THE SPIRIT OF THE PEOPLE OF OKLAHOMA AND INDIAN TERRITORY WHO WILL SOON BE CITIZENS OF A NEW COMMONWEALTH—STORIES OF LIFE AND WORK IN THE TWO TERRITORIES—WHAT THE PIONEERS HAVE ACCOMPLISHED—THE PASSING OF THE BLANKET INDIAN

BY

M. G. CUNNIFF

OKLAHOMA amazes an Easterner. The wide asphalted streets, the plate glass fronts of department stores, the clean sidewalks, the well dressed unhurried shoppers, the finish, the metropolitan air you find in Oklahoma City, for example, seem marvels to find in a territory only seventeen years old. But do not say so.

A New Yorker who went there on business complained that fate was thrusting him into a wilderness, and his Oklahoma associates could not reassure him. But coming down to breakfast the first morning, at his hotel in Oklahoma City, he stared around in wonder as he entered the dining room.

"This," he exclaimed, "This in Oklahoma. Why do you know," confidentially, "I even found a porcelain bath-tub in my room."

"Well," said an Oklahoman drily "don't they have those in New York?"

It is better not to be surprised—better to say that the department stores seem to do a large business, or that the trolley ride to the suburbs is pleasant, indeed any comment that satisfies your interlocutor that you expected to find him living in a modern city, even though he dashed into Oklahoma County but a few years ago and scrambled for a homestead. Improvements have marched with swiftness in Oklahoma, and in Indian

HARVESTING GRAIN ON THE FIFTH OF JUNE

Only a few years ago this was uncultivated prairie, the domain of shiftless Indians

A STREET IN SHAWNEE, A RAPIDLY GROWING OKLAHOMA TOWN

Territory, but the people there do not care to stop to gloat over what they have done. They would rather think of what they are doing and are going to do.

Oklahoma has grown in seventeen years from a little nucleus of "boomers" in the heart of the old Indian Territory. First the Creeks and Seminoles in 1889 yielded up to the white men old Oklahoma, the goal of the first great race of "sooners." The Sacs and Foxes, the Iowas, and the Pottawottomies gave up another slice of fertile prairie; later the Kickapoo lands and the Cherokee Strip were added. And only five years ago the Kiowas and Comanches made way for homesteaders. Meanwhile a slice of land that Texas claimed came into the territory as Greer County, and Beaver County was made of the No Man's Land of our geographies. Now, with the breaking up of tribal relations in Indian Territory and the admission of the Indians to citizenship and to individual ownership of land, a new state is springing into being.

It is bigger than all the New England states together, as big as Illinois and Ohio combined, and its red lands teem with all the crops that any state raises from the Canadian border to the beginning of the subtropics in Florida and Texas. You should see in the fall the white bolls of ripe cotton on the brown stalks that have advanced by acres into the oak woodlands of Indian Territory down near Madill. At any little town in northern Oklahoma you may stand on an autumn day, within sound of the whir of

AN OKLAHOMA PEACH ORCHARD WITH SWEET POTATOES BETWEEN THE ROWS

The farm of a settler who believes in diversification

THE HERDS OF A BIG RANCHER IN NORTHERN OKLAHOMA

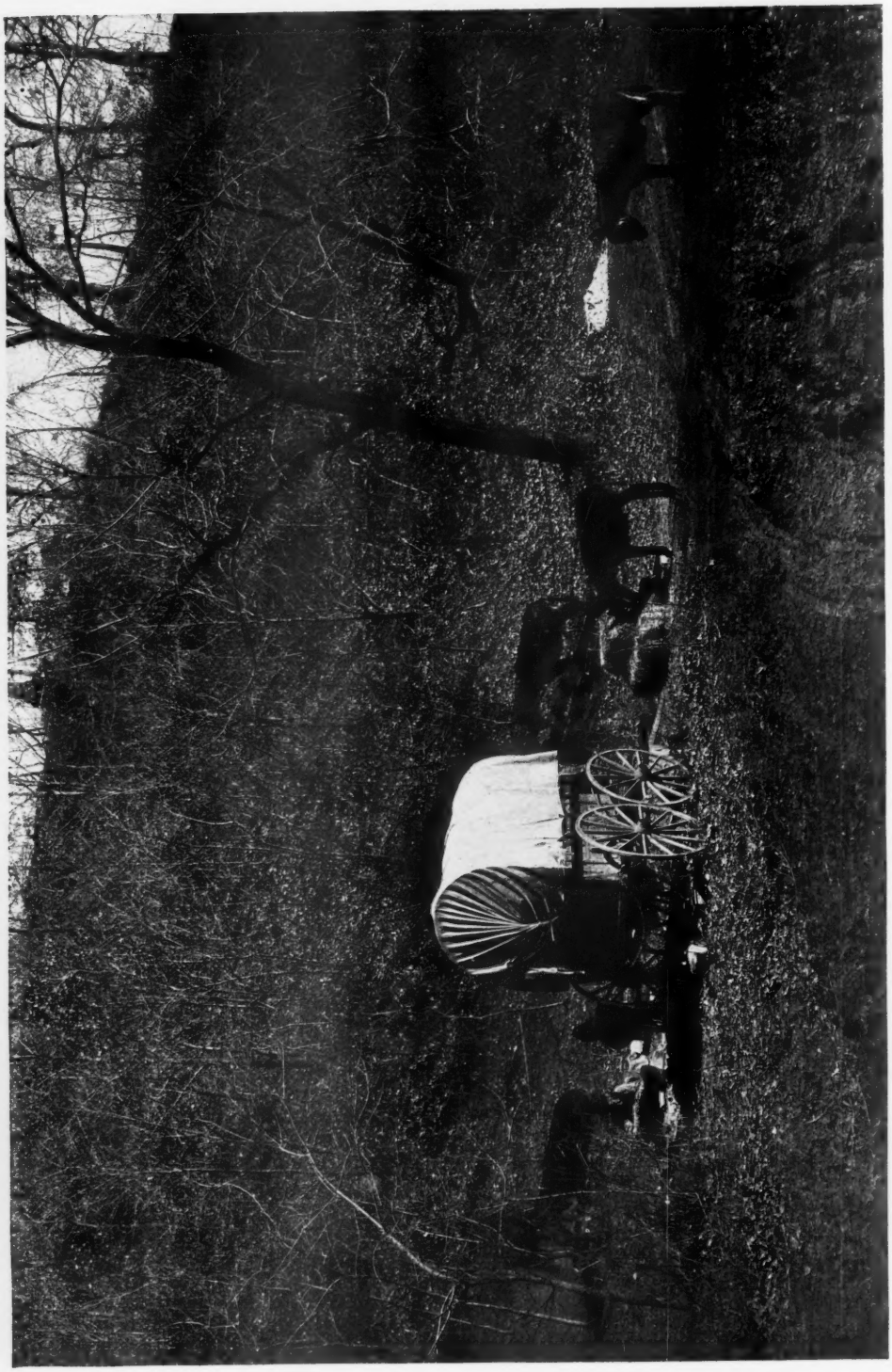
mills that loom along the railroad, and watch the steady growth of the mammoth piles of corn that the farmers are heaping up outside the shelling houses. A steady procession of laden wagons comes swinging up the street, and as far as you can see across the rolling prairie other wagons are crawling along the roads that converge in the town. All day the heavy carts keep jogging in across the swells of prairie and all day the empty ones go rattling back to the farms, while the mills are whirring and singing away and the corn heaps grow faster than they can be depleted. Fat Hereford and Durham cattle are ranging the slopes on either sides of the roads, often cropping the stubble of alfalfa fields already four times cut over. Cotton gins and cotton-seed mills and shelling mills and grist mills are busy at every little settlement. Long trains are moving northward and eastward—and a good many southward toward Galveston—bearing the products of thousands of teeming farms. Coal mines in Indian Territory are pouring forth coal that runs many of the factories of Texas and other states, and oil and gas fields are furnishing the dwellers in bustling towns with the cheapest light and fuel in the world. And everywhere are schoolhouses, for no child in Oklahoma lives outside a school district. At recess time you see the healthy youngsters, every one with a lariat, playing "round up" in the schoolyard.

Seven hundred thousand people are duplicating the life that is going on in Illinois and Indiana. The soil they cultivate is red and not brown. Their houses, their towns, their schools are newer. But in nothing else do their surroundings differ from those of their former homes in the Middle West except that a profounder beauty characterizes the scenes they look upon. Their stuff may be shown by one illuminating comment a territorial officer, whose duties bring him into contact with people from all over Oklahoma, made on them.

"Some settlers came here with money," said he, "some came with practically none. The later comers brought with them the

RAISING ANGORA GOATS CAN BE MADE A PROFITABLE INDUSTRY

AN EIGHT-YEAR OLD APPLE ORCHARD IN INDIAN TERRITORY



AN OKLAHOMA PIONEER AT THE NOON HOUR BY THE ROAD-SIDE
Taking a wagon load of corn to the shelling mills

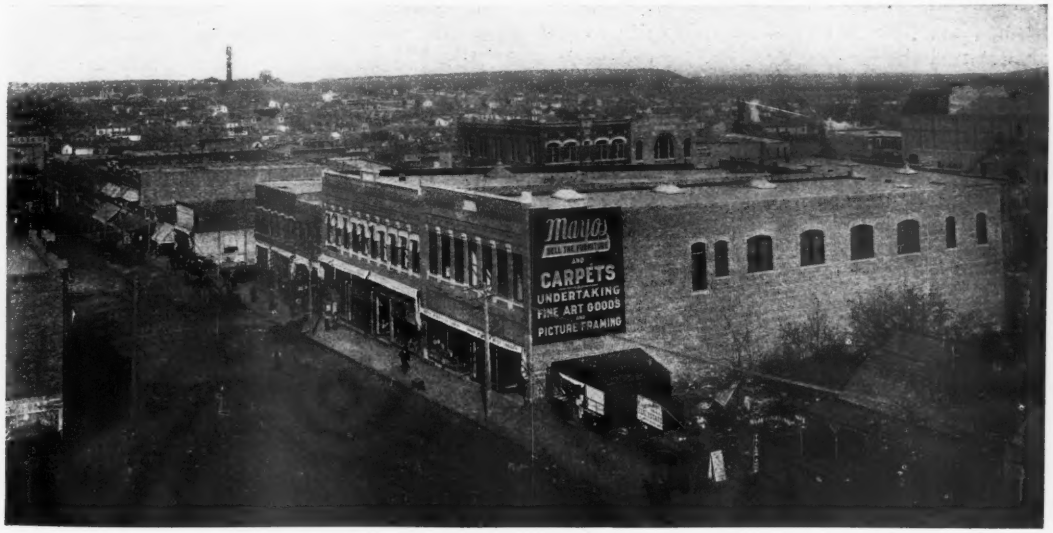
TULSA, INDIAN TERRITORY, IN FEBRUARY, 1905

proceeds from the sale of farms back East or the savings of thrifty lives, and did not homestead land but bought it. They bought it largely from the settlers who came here with money and tired of the task of breaking virgin prairie to productiveness. Those who, coming with money, spent it and sold out thus, were the failures. The men who came with practically nothing but their own hands and brains made good. These have been the successes."

I asked one of the richest and most highly respected business men of Oklahoma City how much he had with him when he came there.

"Fifteen dollars," said he. "I sold my free homestead for enough more to start a small store."

It is men like this who have built the state. The lure of free homestead brought to the territory a froth of speculators, who blew away, perhaps successful, perhaps unsuccessful, when the real pioneer's task began of making the land fruitful. The men who



TULSA, INDIAN TERRITORY, IN DECEMBER, 1905
A bustling town that is growing with great rapidity

THE BUSY SCENE WHEN THE STEAM THRESHERS ARE AT WORK ON AN OKLAHOMA FARM

stayed and founded homes gained the independence they sought. But they wrestled mightily to do it. The quality that brought them through gives the strength to the fibre of the new state. It could hardly have better.

I remember a vista of surpassing beauty in the southern part of Indian Territory. The setting sun through a bank of purple clouds on a broad valley thirty or forty miles long. There was the shine of water here and there, there were stretches of billowy grass land, long reaches of dusky woodland, the foreground broken up in little hills, a range of tall mountains in the background. No sign of life was visible. There was the Oklahoma of 20 years ago—a possibility. In northern Oklahoma were little one-street villages of crude buildings, horses tied in front of stores with the inevitable square fronts, wagons jolting along the ruts of the muddy red road that formed the main street, children playing about a little one-roomed school house. Wheat fields, corn fields, and orchards spread their broad acres about little cottages upon which vines had just begun to grow. And I rode through the muddy street of an Indian Territory town of larger size, where I counted twenty new buildings going up at once, and watched an unceasing procession of pedestrians move along the sidewalks before broad attractive shop window displays. Paving materials strewed the side of the street. Paving would begin the next morning. There is the state of Oklahoma of to-day. The broad asphalted streets, the substantial buildings, the trolley cars, the imposing residences of Oklahoma City, the huge cotton mills with cotton bales spread by the acre on the platform outside, the busy railroad yard, the fair fat farms of the surrounding county—here was the Oklahoma that showed what the to-morrow will be.

There are no drones. Everybody is busy.

HOW THE OWNER OF A BIG FARM HARVESTS HIS WHEAT CROP

New land is being broken. New buildings are going up. New trolley lines are starting. New waterworks are being put in. How can the work be done so fast? In one town I spent a half hour in the Commercial Club. In that busy time half the leading business men came in to discuss some enterprise or other in which all were interested.

"If a man comes here to enter business," said the secretary, "and he doesn't put his shoulder to the wheel and co-operate to push the town's fortunes, he soon learns that the community does not want him. Oklahoma makes rapid progress because its citizens pull together," and he turned to speak with a store-keeper who had offered a prize to the Oklahoma farmer who could raise the best cotton: he said that it helped his business to have the farmers raise good crops.

THE HOME OF A PROSPEROUS INDIAN OF TO-DAY

Thriving towns have sprung up everywhere. Oklahoma City has the air of a metropolis. Lawton, Ardmore, Shawnee, Enid, Guthrie, the capitol, and other Oklahoma towns have their commercial clubs, their spirit of co-operation, their hustle. Okmulgee, South McAlester, Coalgate, Chickasha, Tulsa, Muskogee, and dozens of other towns in Indian Territory are a-quiver with industry. Many of them did not exist five years ago, and the largest ones have doubled their population since then.

Business men quickly adapt themselves to the conditions of a new country. I met one who had made his success by paying the railroad fares of farmers who would come in from the surrounding country to trade with him. Others, studying the wants of an agricultural community, grasp the opportunity to start a new business. One told me of opening a jewelry store and disposing of his whole first stock in one harvest month. A steady business was thus established. Fortunes, of course, have been made in the oil region and in the coal fields; and department stores, breweries, cotton gins, mills and factories have earned large profits for their

A FUTURE CITIZEN OF THE NEW STATE

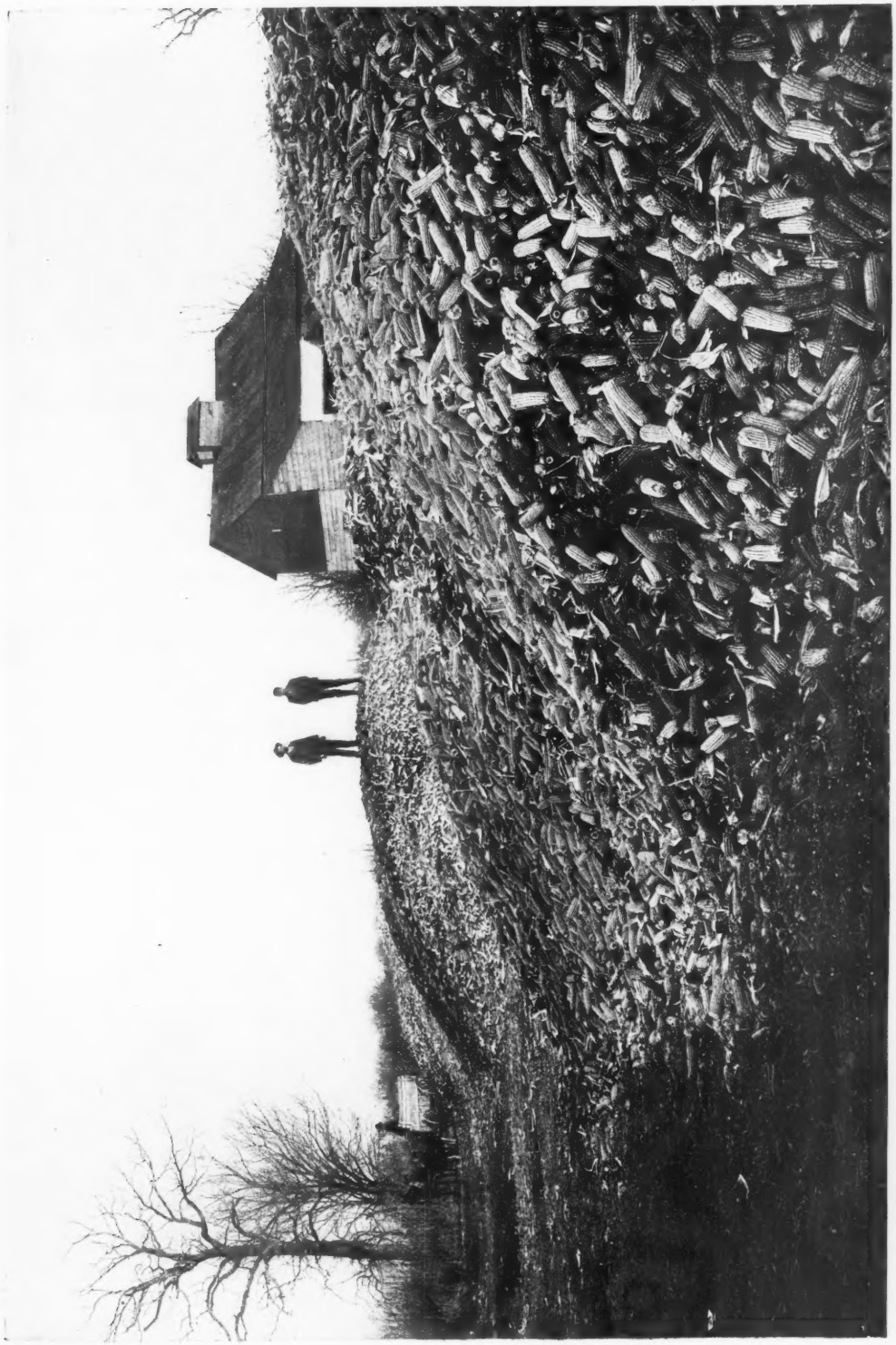
owners, but no business man lives to himself alone. Everybody co-operates with his neighbors for common ends. I found the territorial superintendent of schools preparing a course of instruction for the teachers' conference, to inform them how to teach agriculture to their pupils. The whole teaching force of the territory were to co-operate to do what they could to help agricultural progress.

A WHEAT FIELD NEAR OKLAHOMA CITY

Nature has given the new state a bounteous endowment. The land is fertile, well-watered rolling prairie except where the blue Wichita Mountains lift their picturesque heads in southern Oklahoma, and where the eastern end of Indian Territory is broken into tree clothed ranges. There is a plentiful growth of timber. The western tier of Oklahoma counties are, of course, out in the semi-arid belt where irrigation is needed for the most successful farming, though there is rain enough to grow grass for cattle. Out here, in Woodward, Beaver, Day, Roger Mills, and Greer Counties there are still thousands of acres of public land yet to be homesteaded. Though there may be valuable minerals in the Wichita Mountains, the Oklahoma end of the new state will probably always be essentially a region of farming and grazing, like Kansas and Nebraska. Vast coal measures, however, underlie the central part of Indian Territory and South McAlester and Coalgate, which look like the soft-coal towns of Indiana, supply the surrounding country as far south as Galveston, Tex., with coal. The Kansas oil field extends down through the Osage nation, and it is a question whether the Territory cannot far outstrip Kansas in producing oil and gas. Both are now extremely cheap in Tulsa, Sapulpa, and other towns in the belt. Cheap and inexhaustible coal, a plentiful supply of gas and oil, and immense stretches of timberland, in the eastern part of the new state, tell a story of manufacturing possibilities, even though the hope of the greater Oklahoma must eternally rest on its farms.

Immigration is coming in faster than to any other part of the country except, perhaps, Texas. Since 1900 the centre of population of the United States has been moving southwestward, drawn by the influx of settlers into Texas and the territories. The railroads offer low rates to home-seekers, and certain days of the month have been made "home-seekers' days." Great train-loads of people come down, and spread through the territories looking for opportunities to settle. Just as in the rushes of "sooners," men came at the lure of free land, staider farmers from the Middle West are coming now at the lure of cheap land.

A BUNCH OF CATTLE ROUNDED UP NEAR MUSKOGEE, I T.

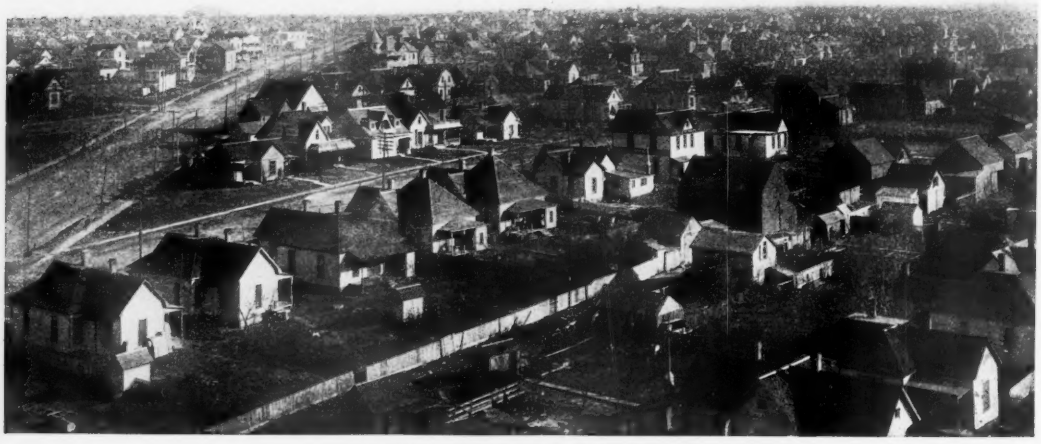


TWELVE THOUSAND BUSHELS OF CORN GROWN ON A SINGLE FARM, AND PILED ON THE GROUND FOR WANT OF CRIBS

AN INDIAN TERRITORY TOWN SPREADING OUT OVER THE SURROUNDING COUNTRY

To take an example, the Kiowa and Comanche lands were opened to homesteaders five years ago. In one month, a year ago, forty-one of the original settlers in Comanche County sold farms amounting to more than 6,000 acres at an average price of nearly fifteen dollars an acre. Thirty-two farms were sold in the same month in Kiowa County, amounting to nearly 5,000 acres, at an average price of about twenty-three dollars an acre. In brief, the "sooners" had been given land which acquired this value through their improvements. They were selling at good prices land which had cost them nothing but their work on it. The average value of farm land throughout the territory is a little more than $15 an acre. The business proposition of moving to Oklahoma is simple for a Middle Western farmer whose land is worth anywhere from $50 to $100 an acre. He can sell his old farm and buy one in Oklahoma two or three times as large. Or when a Middle Western farmer has died, leaving the old farm to his sons, they can sell it and with the proceeds buy in Oklahoma a farm of similar size for every one of them. You meet men all over the territory who have moved out there under this stimulus. One man from Kansas who was leasing a quarter section of the territorial school lands told me that, to his huge surprise, he had found on neighboring farms two other families from his own home village. All had sold out in Kansas and had gone to Oklahoma with the same desire, and not one of them had known of the migration of the others.

Many of the "sooners" were speculators



THE OUTSKIRTS OF OKLAHOMA CITY

A neat, prosperous, fast growing town, as well equipped as the older cities of the East

who took part in the mad races for free land with no other idea than to sell out the acres they won to later comers. Others were not practical farmers, and soon tired of the arduous work of breaking the open prairie to cultivation. The men who bought the farms of these, and the men who are coming in now come with a practical knowledge of the work that must be done. And the successful pioneers are workers of similar type. In 1904, between 40,000 and 50,000 people came in on new homesteads. Probably 20,000 came in and bought land. Since then, with statehood approaching, the immigration has increased.

As in the Middle West, one farmer will fail and another will succeed. Good farming will produce 50 bushels of corn to the acre, or forty bushels of wheat, and one farmer tells of nine cuttings of alfalfa. But no fact struck me more forcibly in talking with

INDIANS AT PLAY
A bison hunt on the 101 Ranch

people in Oklahoma, from the territorial officers in Guthrie to the farmers I hob-nobbed with on the country roads, than the well balanced testimony they gave of their country. They did not "boom." They declared that they had as good a stretch of territory as exists anywhere, but that it is "up" to the man who comes here whether he wins success. Everybody I met testified that the new state will need scientific farming. On that depends the ability of the rural districts to support a large and prosperous population; and on the size and prosperity of the rural population will depend the growth of the cities.

One railroad, for example, gave out cotton-seed last year to the farmers at alternate stations between Guthrie and El Reno, and asked them to plant it. The wheat crop in that section, as indeed in many places in the country, was not a success. The farmers at the neglected stations had no paying crop to ship. But those at the stations where the cotton seed had been distributed had at least their cotton. The experience deeply impressed it on the minds of the farmers of the section that diversification is the law of successful agriculture in Oklahoma. There are few big bonanza farms like the 101 Ranch, described in the February number of this magazine, where huge crops of wheat and corn are raised, and great herds of cattle fatten. Farming in Oklahoma is typically the cultivation of a quarter section. It has to be managed with brains.

One farmer in Pottawottomie County told of planting ten acres of potatoes which yielded him a little more than $700. Two railroad conductors who heard of this rented 100 acres in 1901 in the same county and planted potatoes. They cleared $15,000 the first year. The next year they bought eighty of the 100 acres at $80 an acre and leased eighty acres more. The crop was not so good, but they cleared $10,000 that year. They have been successful since. Another man secured a little patch of only eight acres of "black jack" land covered with brush, about seven miles from Oklahoma City. He bought 400 Leghorn hens. He now sells the cocks at $1 apiece. Last year he made $1000. He is now trying to persuade the farm boys of the territory to go into this chicken industry to earn money for their education. From an eighty acre orchard, (half of her farm,) near Oklahoma City a woman, Mrs. Ellis, recently sold $8,000 worth of apples in one season, and then sold the farm for $20,000 to a man who thought he could do even better. A farmer near Arapahoe cut three crops of alfalfa from fifty acres in one season, which netted him $3,500. Such stories might be multiplied indefinitely. Some years the price of

cotton will be low; another year the wheat crop will fail. A farmer who plants other crops, in addition to these staples and corn, comes out better than those who put all their eggs into one basket.

I asked dozens of farmers how Oklahoma differs from their old homes in Kansas, or Wisconsin, or Ohio.

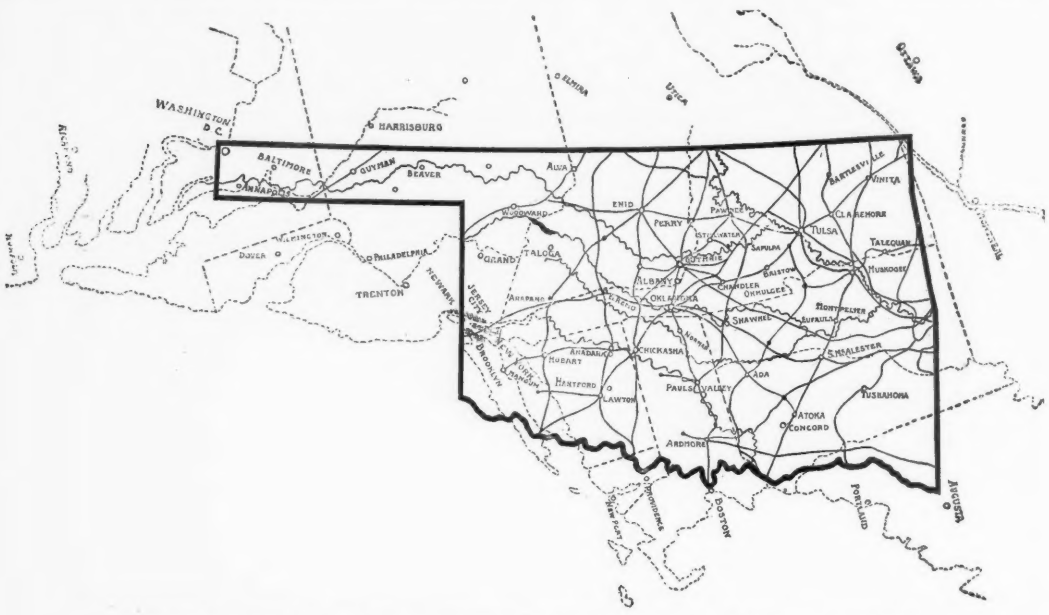
"Free land or cheap land that gives a man with little capital or none a chance to own land and make a good living. Virgin prairie soil that does not require expensive fertilizers," was the uniform answer.

"Why does the school house at every little settlement attract your attention?" said one farmer. "I came from Indiana. My next neighbor came from New York State. We sent our children to school back East. Is there any reason why we shouldn't want to send 'em to school out here? Why, the school house is the first building we build!"

More than 2,000,000 acres in the new state will belong in perpetuity to the schools, the agricultural college, and the university. The Government has, of course, been supporting Indian schools in Indian Territory, but every little town has a school, supported by taxation, for the white children. In Oklahoma, the school lands are already paying $2,500,000 a year. They are rented to farmers who hope to earn enough during the term of their leases to buy land of their own. An efficient commissioner at Guthrie, with the zeal of a real estate agent, is vigorously promoting these school farms, and they are being rapidly taken up.

The new state will have to face the Indian problem, but that is not so serious as it looks from a distance. The counties that formed Old Oklahoma, like Logan, Canadian, Oklahoma and Kingfisher have but few Indian inhabitants; there are more in the newer counties, like Kay up next to the Osage country. When the tribal relations were broken up in Oklahoma, every Indian was given an allotment of land, of which he is obliged to keep a homestead of forty acres, though he may rent the rest and, in time, sell it if he wishes. The big ranches in northern Oklahoma, like the 101 Ranch, are owned in large part by Indians who lease the land to the ranchers. Most of the land in the territory, however, is owned by white men.

Indian Territory, on the other hand, has been practically all owned by Indians. It has been divided into six Indian reservations —the Osage, Cherokee, Creek, Seminole,

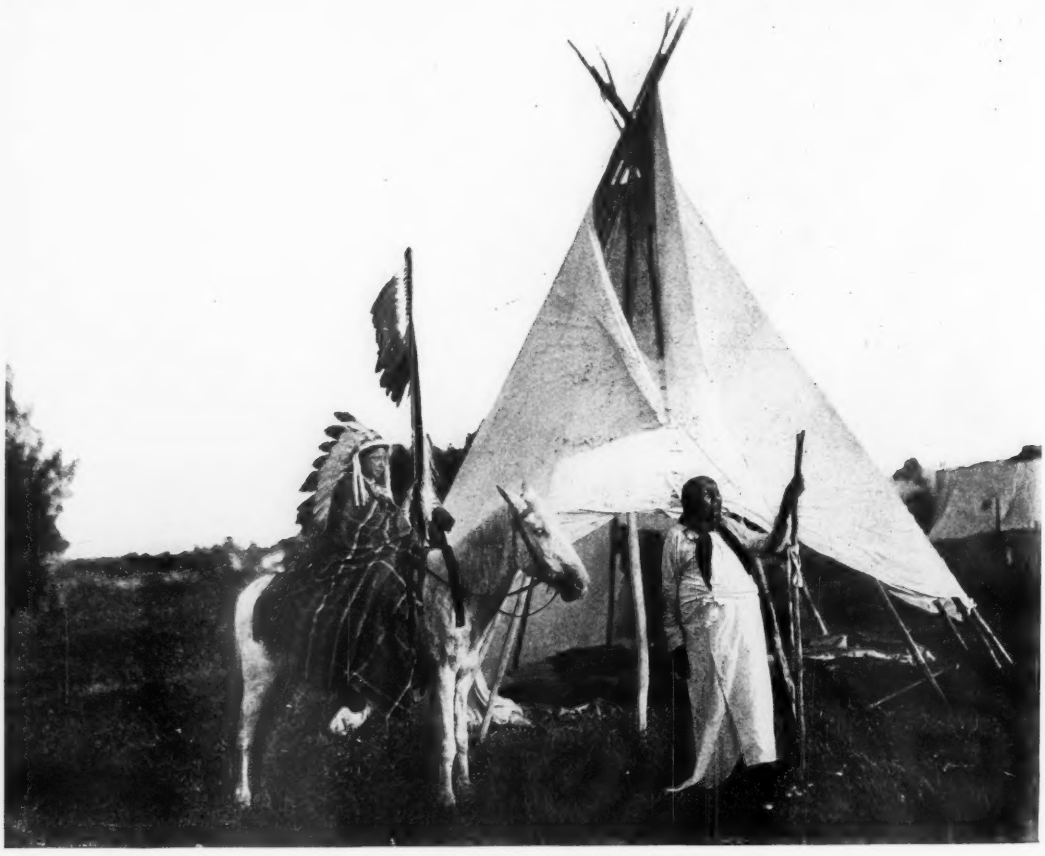


THE NEW STATE OF OKLAHOMA COMPARED IN SIZE WITH THE EASTERN STATES

It is as far from the southeastern corner of the new Oklahoma to the northwestern corner as from Augusta, Me. to Washington, D C.

WEIGHING COTTON NEAR TULSA, I. T.
The cotton fields in Indian Territory march in among the tree trunks of the woodland

Chickasaw, and Choctaw nations. Only the townships have been opened to settlement and ownership by white men. Now the lands are being divided *pro rata* among the Indians of each tribe, men, women and children, so that every Indian will start his citizenship in the new state as the owner of a tract of land that renders him independent. Already, however, shrewd farmers have negotiated with Indians to rent many of the rich farms, and even to work, for the Indian landlords, the homesteads, ranging from 40 to 18 acres, which they are not allowed to rent. Though it is true that there are Indians, trained in the Government schools, who are competently cultivating their own farms already, and, especially among the Cherokees, Indians of keen business ability, the red men, taking them by and large, do not care to work. They are not constructive; they are not a match for the white men in business. Lands which as free citizens they will now be able to rent out, are lands that thousands of them are doomed, in the nature of things, to lose when they have the right to sell. It is "come day, go day," loaf, sleep, feast, dance, and get into debt with the average Indian. As owners of rich lands, too many will yield them up at last to the white men whose acquisitiveness and industry are greater. The Government has insured them against spoliation by making a sufficient homestead for every Indian inalienable. When the improvident ones, who have run into debt, and have been obliged to sell, feel the pinch of necessity, they will have to work their own little homesteads, or rather, their children will, if school training has not meanwhile persuaded them to it.



GAMES ON AN INDIAN HOLIDAY
A tableau—"Awaiting the coming of the white man"

There are fully a million white inhabitants in the two territories. Former Governor Ferguson of Oklahoma makes an estimate of more than 700,000 people in Oklahoma now, including fewer than 15,000 Indians. There are estimated to be 400,000 people in Indian Territory, only one quarter of whom are Indians. As one travels through the territories, this proportion is borne out by one's experience. One might ride through Oklahoma, stopping off at town after town without ever seeing an Indian. In Indian Territory an Indian shack or tepee is occasionally visible from the railroad, with its dwellers loafing about; but you recognize no Indians in the towns, and you do not see Indians loafing about the railroad stations. If you do see one in town, you have to be told that he is an Indian, for he is probably a half-breed or a quarter-breed, well-dressed and competent-looking, not distinguishable from the white men with whom he mingles.

'Indian Territory," said a business man in Tulsa, I. T., "is not peopled by Indians. There are fewer than 100,000 Indians owning the land, and there are probably 300,000 white men in the towns and scattered through the territory."

There will always be Indians in the state of Oklahoma, as there are Indians in Maine, in Wisconsin, in New York; but the state's constitution will be made by representatives of 1,000,000 white men, and it will be a white man's state. The Government has heretofore provided vigorously against the admission of liquor into Indian Territory, and as a necessary protection to the Indians, the new Oklahoma will inevitably be a prohibition state. It will probably be Democratic, but about that it is yet difficult to tell.

THE URGENT NEED OF TRADE SCHOOLS

AMERICAN GOODS CHEAP RATHER THAN WELL MADE—WHY GERMANY LEADS US IN THE RACE FOR FOREIGN MARKETS—THE AGE DEMANDING BETTER WORKERS THAN CONDITIONS PRODUCE—WHEREIN OUR SCHOOLS FAIL AND WHAT THEY MIGHT DO

BY

F. A. VANDERLIP

VICE-PRESIDENT OF THE NATIONAL CITY BANK AND FORMERLY ASSISTANT-SECRETARY OF THE TREASURY

WHEN a few years ago the newspapers coined the phrase, "The American Commercial Invasion of Europe," it came into instant popularity. We thought it a most happy way of describing the entrance of the United States into the world's competitive markets. Indeed, for a time, it was a phrase that brought apprehension to foreign nations; for our progress was so rapid, our competition became so severe, that it was difficult to say where the conquest was to stop. Later events, however, demonstrated that it could not go on unhalted.

It is true that we are still proud, and have much good reason to be proud, of our success in international competition. We have seen our exports of manufactured products double and double again. We have seen, with justifiable pride, that we are able to make many manufactured articles of commerce more cheaply than any other people in the world can make them. We have combined with the advantage of unexampled supplies of raw material an unequaled genius for doing things on a great scale. With notable clearness we have seen the economic advantages of great industrial combinations. We have been quick to recognize industrial waste, whether in the form of unneeded labor, of loss of by-products, or of unnecessary transportation. To reduce waste in the form of unnecessary labor we have taken full advantage of every ingenious machine which our remarkable talent for mechanical invention could devise. We have

brought together industrial units into huge combinations, and have then administered them with a far-seeing wisdom that has made us able to produce certain great staple articles of manufacture so cheaply that our competition has been the despair of other nations.

But after we admit all that—after we grant that we have a giant's crushing grasp on the international industrial markets wherever we have been able to bring into play the combination of our advantages in cheap raw material with the economies of production on a vast scale and with the aids of most ingenious labor-saving machinery—after granting all this, we still must admit that we are a long way from having really gained command of the competitive industrial markets.

It is something of a shock to reflect that practically every victory we have gained in international competition has turned on considerations of cheapness and not on considerations of quality. Our talent for mechanical invention seems unequaled, and it has won us many victories, it is true; but, aside from the advantage which that special ingenuity gives us, there are few articles we bring to the international markets upon which we would dare rest our success solely on claims of high-grade workmanship. Wherever we have won success we have as a rule won it because we could manufacture, *en masse*, with wonderful economy. We have been successful because we could make a thing cheaper —not because we could make it better.

So far as my recollection goes, I have never found in a European shop half a dozen articles of American manufacture that were offered because they were superior to similar articles of European manufacture. They may have been offered because they were more ingenious, they may have been made on such a scale of production, turned out with such economy, in an endless grist from some great automatic machine, that they challenged comparison in cheapness; but it is rare indeed to find in Europe an article of American manufacture that is offered solely on the ground of superior workmanship. If real accuracy of workmanship is wanted, if artistic form and taste are desired, if thoroughly skilled and trustworthy handicraft is sought, it will not as a rule be found in a display of American wares. If we look for a production that has had worked into it some of the soul and the character of the workman who made it we will rarely find it bearing the legend: "Made in America."

We must recognize that the great industrial development which we have seen take place within our memories has had its main foundadations built up of something else than of superior manual skill. These foundations are to be found in cheap raw material, in the economies of manufacturing on a vast scale, and in the aids given by the greatest utilization of labor-saving mechanical devices. It has been a perfectly logical and natural consequence that in building a great industrial success upon such factors as these we should for a time sacrifice highly skilled handicraft. We have seen the subdivision of work carried, in our great manufacturing establishments, to the highest imaginable point. As a result we have seen the demand for skill diminish. It has seemed for the time being that all that is necessary is to teach a man to tend a machine, to make him an automatic wheel in the mechanism, and then to ask nothing more of him in the way of brain or breadth of understanding or of thoughtful outlook.

Men rejoiced at the accomplishment of an invention which would do with perfectness tasks which before had required many hands skilled by long training. When the output of such a machine was placed in competition with the hand-made goods of other countries we gathered for a time new laurels in the progress of our commercial invasion. Then our competitors came to study our methods and to appropriate our ideas.

We have carried on this system of specialization and have adopted these mechanical aids to such an extent that in certain lines we can manufacture cheaply enough to have little to fear from competition in any quarter, and we can at the same time pay wages, even to our automatic workers, that are a marvel to the wage earners of other countries.

But, with all these advantages, we are beginning to find that there are countervailing losses. While we have made it possible for the unskilled man to tend a machine and turn out the product with wonderful economy, we are now beginning to find that, in keeping that man confined to tending the machine, in giving him no intellectual interest in his work and no opportunity for any but the narrowest outlook upon the field of industry in which he is engaged, we have unintentionally taken almost certain means to prevent his mental and

technical development. We have of late heard much of the call of the employer for skilled men to supervise work. We have heard employers marvel that, while the lowest paid ranks of their workmen are fully supplied, they have the greatest difficulty in finding men to fill the higher positions. The reason is of course most obvious. Men need training to become skilful. They must have variety of work if their outlook and technical skill are to have breadth. They must know something of principles if they are to have original ideas of value. I believe that we have failed utterly to grasp the problem of the relation between education and our industrial development and prosperity.

Within the memory of most Americans there has been what amounts to nothing short of a revolution in industrial affairs. We have seen England lose much of her preeminence among the industrial nations. We have seen two other nations grow from comparatively small beginnings to places of the first rank. I have indicated what I believe to be the principal elements upon which our own industrial success has been based. But we have seen another nation without the special advantages of raw material which we have enjoyed push forward in a development as rapid as ours, and wrest from others in the competitive fields the advantage they had long held in security. Germany has had the scantiest aid from nature to make that progress possible. Not only has she had no wealth of raw material such as we have had, she has had no vast homogeneous domestic market, a factor which has been of vital aid in building up our own manufactures. Her people have lacked the peculiar inventive ingenuity which has in many fields of industry been the sole basis for our achievements. Her artisans have not possessed that delicate artistic sense which has made the handiwork of France superior to the obstructions of all tariff walls. Her industries have been forced to grapple with English competitors who were entrenched behind a domination of international markets successfully maintained for generations. But amidst a poverty of natural resources, and from among a people not singularly gifted either with inventive ability or artistic temperament, we have seen emerge in a generation the great industrial forces of the German Empire.

The time is within the memory of most of us when Germany was in large measure an agricultural state winning but meagre return from sterile acres. There were neither rich mines below ground nor exhaustless forests above. Whatever was done by the Germans had to be done in the sweat of their brows. Whatever they have accomplished we must admit they have fairly earned, for they have been heirs to few bounties of nature.

I have made a somewhat careful study of Germany's economic success, and in doing that I have become firmly convinced that the explanation of the remarkable German progress is to be traced in the most direct manner to the German system of education. The schoolmaster is the great corner-stone of Germany's remarkable commercial and industrial progress. The school system of Germany bears a relation to the economic situation that is not met with in any other country.

We all know something of the thorough secondary education which the compulsory education laws of Germany insist shall be given to every youth under fourteen. We all know something of the high standing of her universities and the great practical value of her technical schools. There is another feature of the German educational system, however, about which less is known in this country, but which is I believe a feature of the most direct importance in shaping Germany's industrial progress.

There is a division of instruction in Germany known as continuation trade schools. These schools are designed for the instruction of youths engaged in regular industrial employment. They are auxiliary to the ordinary schools, and entirely outside of the scheme for regular academic training or of higher technical instruction. They are for the rank and file of workers, for the privates of the industrial army. The courses are so arranged that they supplement the cultural training that the youths have had in the regular school system, and at the same time supplement the technical routine of the shop or the office.

The students in these trade schools are youths who have completed the regular compulsory educational course and have gone out into the ranks of active industrial and commercial workers. The hours of instruction are so arranged that they fall outside the regular hours of labor. The curriculum is broadly practical. It includes the

science of each particular trade—its mathematics or chemistry, for instance—and its technology. But it does not stop there. Principles of wise business management are taught. The aim is to prepare a student for the practical conduct of a business. He gains knowledge of production and consumption, of markets, and of the causes of price fluctuations. He is put into a position to acquire an insight into concrete business relations, and into trade practices and conditions. Are not such aims worthy of American schools? What truer democracy can there be than a school system that will point the way to every worker, no matter how humble, by which he may reach a clearer comprehension of the industry in which he is engaged and by which with the aid of this knowledge he may rise to a position of importance in that industry?

To do all this does not mean the "commercializing" of our educational system. There is no need for opposition even from those who hold that it is not the place of the schools to teach youths how to earn a livelihood. Those educators who lay strongest emphasis upon such phrases as "character formation," "mental discipline" and "harmonious cultivation of the faculties" may continue to hold firmly to those views and at the same time welcome an auxiliary school system which, without curtailing their ideal culture courses, will give after the ordinary period of school life is over the opportunity for valuable practical instruction.

Such an auxiliary system of trade schools would be available for the youth only after he has left the direct influence of our present school system. There are in the United States 10,000,000 youths from fifteen to twenty years old. Three quarters of that number are not in attendance at any school. Here are seven and one-half millions of young people from whom the students of such trade schools would be drawn.

Surely it needs little training in the economies of industry to comprehend what an unreckonable advantage it would be if a substantial proportion of that seven and one-half millions were to be brought within the influence of a new and entirely practical system of education designed to make each pupil a more efficient economic unit.

The present generation of American youth entering industrial or commerical life is to encounter new and in some respects harder conditions.

The forces of combination—the labor union and the trusts—are united in a tendency to make commercial or industrial automatons of a great percentage of our population.

There is but one poter that can counteract that tendency—the schoolmaster. Youths who can gain from their daily work only that narrow, routine, technical experience—which in the main is all that the conditions of modern idnustry offer—have a right to something more. They have a right to opportunity for a practical education. As modern conidtions narrow their technical training, those same conditions broaden the opportunity for the man who does acquire knowledge which will give him a grasp of more than a single detail of his business.

I do not believe it is enough for us to say that we will give to our youths the best education possible to train them as intelligent citizens. I do not believe it is enough to give them a few years of elementary education and when they go forth to actual work, offer them no educational aid or training to better comprehend the principles in the field of industry in which their lives are cast.

Many noble teachers have held a beautiful theory that their work should be devoted to building up character and culture in a youth. They would so garb him in an armor of sweetness and light, so instil into his mind the love of the beautiful and build up generally by cultural instruction his mental characteristics that for such a youth any labor would be dignified, and he would be provided with springs of learning and appreciation from which, wihout regard to material surroundings, he could always drink with the deepest satisfaction. That is the ideal of those who believe that we must beware of commercializign our educational system, who believe that we should aim at the training of character the giving of culture, and waste none of youth's precious time with instruction in trades and occupations. It is a noble ideal, but we must recognize the fact that a boy set to forge such an ideal armor before he is fifteen years of age will find it an imperfect protection against the difficulties of modern industrialism.

What I believe we need is not a rad-

ical change in our present school system but rather a material addition to it. I am confident that the present system of education does not meet the present requirements of commercial and industrial conditions. From the youth who must early earn his own living I believe we have taken away the advantages of school training at too early an age. There is a vast army of young men actively employed in commercial and industrial callings who feel, or can be made to recognize, the great need which they have for a better understanding of the principles of their business, and who recognize clearly enough that these principles cannot, except in the rarest of cases, be learned at the workbench or at the desk under the present conditions of modern commercial and industrial life.

I am convinced, too, that Germany's industrial success and the comparative contentment of her population are in a very large measure due to her system of trade schools. Now I want to leave no confusion in the minds of my readers as to just what I mean by these trade schools. I do not mean the addition of manual training to the course of the public schools; that may or may not be wise, but the decision of that question has no bearing whatever on the sort of school I have in mind. I do not mean the establishment of schools to teach young men trades. I know that such schools have been open to much criticism from practical workers and will meet much opposition from labor unions. I recognize force in the hostile attitude of organized labor in regard to schools designed to teach trades. Their point of view may be selfish but it is perfectly human. I do not mean either that we have any lack of higher technical schools. I think we are fully abreast of the rest of the world in the facilities we offer for the training of our captains of industry.

It is the rank and file that I am considering, the privates of the great industrial army who have gone forth to the daily grind of work, taking with them such mental equipment as our school system has been able to give to youths of fourteen or sixteen years. These young men are fitted into the great industrial and commercial organizations, and come under the influence of our system of specialization and of our development of automatic machines. They face at once the danger of becoming automatic workers. On the other hand, industry, and commerce are squarely facing the very grave danger of training up an army composed solely of automatic workers—an army that will be without active intelligence or effective training in considering the requirements and development of the industries with which it is engaged. I believe we need to establish for the members of this army a means which will aid them to gain a supplementary education along lines particularly adapted to their requirements.

Some of us are apt to find much fault with the labor situation. We criticize the attitude of trades unions and the demands of labor organizers. Might it not be well to remember that we have created an industrial condition in which, in a very large measure, one man's work is exactly like another's; and in certain fields, the work of all largely automatic, that our industrial situation is doing quite as much as the labor organizers to reduce to a dead level of equality the value of men's time in certain industrial lines?

If we want men who will think for themselves, must we not give them a training which will enable them to think correctly? If we want men to become attached to their work and their positions, must we not give them an intellectual interest in that work? If we want independence of thought in a workingman, must we not provide him with the opportunity to be something more than an automatic figure revolving without volition, interest, or active intelligence, as the wheels of industry revolve? From the point of view alone of the attitude of the workingman toward the industrial problems of the day I believe we are doing less than our duty in the way of education, and very far less than the selfish interests of capital would demand if employers had a clearer vision on this subject.

If I may again turn to Germany for an illustration, I would say that one of the most important influences which has been working toward the intelligent moderation of the attitude of organized labor is to be found in the superior education of the workers—in the educational system which has provided organized labor with leaders who have a broader grasp of the problems of industry and a clearer understanding of its principles than they could have had without special educational advantages.

If it can be demonstrated that this is a correct view—that moderate and wise administration of the great democracy of organized labor is more likely to follow if the masses of workmen are educated toward a better intellectual comprehension of the principles of the industries with which they are engaged—then what money value could be put, in this country, upon such a system of education as would ultimately give to organized labor wiser leaders? I believe there is a profound and important truth in this view. If we drift toward a condition in which automatic workers live without intellectual interest in their labor we must expect them to follow—without independence of thought—unwise leaders along paths that will be destructive for capital and labor alike. If we offer educational facilities that will tend to train a considerable number of the youths following industrial callings so that they will better comprehend the nature of their work and its relation to the whole industrial organization, if we will provide schools that will awaken an intellectual interest in the day's task and kindle ambition which will lead men on to better work and greater contentment, we shall accomplish a step in the development of our educational system which will be of greater importance than any other change in educational methods that is now under consideration.

I want to assert with all the force which my conviction on the subject will give that such a thing is not a dream. There is a vital demand for the development of our educational system along such lines as I have been indicating. When I speak of the youth whose life has been cast in an industrial calling keenly desiring to find the means for gaining an intellectual understanding of his surroundings I am not speaking of conditions which I imagine to exist. Out of my own personal experience I know something of this subject.

I started life as an apprentice in a machine shop, with the mental training which a country school gives to a boy of sixteen. I supposed at that time I should always follow the career of a mechanic, and very early in my apprenticeship I was strongly moved to get some intellectual grasp of the work. But although I was in a community proud of its schools it had nothing to offer to youths whose days were fully taken up with their regular occupations. With considerable difficulty I found a man who could teach me drafting, another who was willing to give instruction in mathematics. I want to emphasize that I was not one whit different from my fellows in blue overalls. Much of the money that I spent to pay my own instructors I earned by teaching mathematics out of working hours to my shopmates. They were quite as keen as I for an opportunity to get an intellectual outlook on the business in which they were engaged. They had no desire to be mere tenders of machines. I am confident that, if the opportunity had been at hand, a considerable portion of these young men would have entered with zealous interest upon a systematic educational development if it had been shaped along lines that made its practical application to their daily work apparent

Our school system has not thus far provided this, but it is not a difficult thing to provide. It means no revolutionary change in our present system. It means only an addition. The step is not a pioneer one. The system is at work in Germany on a huge scale, attracting hundreds of thousands of youths to its benefits and profoundly affecting the industrial, indeed the whole national, life of that empire. To make the experiment here would involve no possible danger, would interfere in no unfortunate way with our present school system, would entail no expense worthy of consideration. All that is necessary is for American manufacturers and business men to see the worth of the experiment. Exactly the means to bring into play could be soon decided.

My own belief is that the movement should be partly individual, partly the development of the public-school system. I believe the representatives of organized labor and the representatives of organized capital should unite in planning the work. The leaders of industry and the leaders of labor should give, not money—the tax payers can readily bear the small additional burden there would be—but themselves, their hearty interest, their careful thought, their helpful influence and good will. If that is done they will bring an influence into industrial life which will be of incalculable value—of value ethically, intellectually and financially—and will set an example for which the whole country will owe them gratitude.

JAPANESE WOMEN AND THE NEW ERA

THE TRADITIONAL SUBDUED TYPE GIVING WAY TO THE MORE SELF RELIANT TYPES OF WESTERN NATIONS—STORIES OF THE NEW DOMESTIC LIFE

BY

MARY CRAWFORD FRASER

[*The fourth of a series of articles on present day conditions in the Far East. "A Personal Study of the Japanese Emperor" appeared in May.*]

THE women of Japan are passing through a somewhat strained and difficult phase of existence. It is never easy for light craft to move smoothly in the wake set rolling by a huge steamer, and just now the relative positions of men and women in Japan present a fantastic resemblance to the efforts that a fishing fleet would make were it compelled to take the high seas in company with a squadron of battleships.

The late war called out the characteristics of the men of the new Japan so definitely and clearly, that the judgments we have formed of them will probably require small modification for many years to come. Not so with the women; they remained submissively under the bonds of custom and tradition long after the struggle for existence in national life had forced their lords and masters to cast such restraints aside; the seclusion of home life was, for long years, not disturbed by the wave of strenuousness which swept all before it in the world of affairs; the politician who appeared most eager for reform in public matters found in family life the one stronghold where his private ideals could be preserved, and he was the more firmly set on excluding changes from his home because he had been obliged to accept them for the State.

"The man for the world, but the home for man" has been the social axiom in Japan, and it was sorely against his will that the modern Japanese opened the doors of the shrine to the levelling airs of our modern day; grudgingly and reluctantly he has been obliged to grant to subject wife and daughters some measure of equality with himself and his sons; and the women seem to have been anything but eager for such elevation. Their fine feminine sense warned them that what was to be gained in power must be lost in protection; that independence implies strength for self defence; and that the householder who has placed weapons in the hands of his dependents ceases to feel entirely responsible for their well being.

It is impossible to talk for any time with a Japanese woman of the mature generation without being struck by a certain resigned pathos in her attitude towards the actual conditions here. The dread of allowing her daughters to remain unequipped for the battle of life has made her procure for them every advantage of modern education; but there is deep anxiety in the grave glance she casts on the fine tall girls who can leap and run with their athletic brothers, who can pass stiff examinations in subjects the very names of which are a mystery to their mother, but who have not gone through the long hard training in self-effacement which alone can bring them peace under the rule of the inevitable husband and possible mother-in-law. Progress, holding out rich gifts with one hand, carries in the other not peace but a sword.

Households are still divided on the point of their women's status, on the quality of the education to be bestowed on the daughters. It happens still, and must happen for decades to come, that one girl brought up on free and modern lines be bestowed on a husband whose family worships the old ideas with superstitious veneration; that another who has been taught only the old accomplishments and graces finds herself married into a household imbued with Western thought, where parents-in-law regard her as a useless fine lady and openly deplore the short-sightedness which thus cramped her education. There are two families of my acquaintance—each absolutely typical of

its own pole of thought—who a year or two ago thus exchanged daughters.

One girl, the daughter of a great Samurai house, has from her birth imbibed the modern axioms. The Samurai traditions, requiring of women the highest valor and resource, offered no obstacle to the developments and independences of Western education. These were eagerly embraced, and the proud Samurai spirit rejoiced in the access of usefulness and power afforded by them. The one daughter of the house was a tiny child when I first knew her, and I remember watching her take part in certain games of skill and strength played by older children, games which were a sore trial to her childish endurance. But there was no conquering the Samurai spirit of the little lady. When her turn came she carried through the task to the very end; tears of fatigue rolled down her cheeks, but she did what the others had done—it would have been intolerable disgrace to fail. She grew up straight and tall, a match at all the games with her brothers, the joy of her soldier father's heart. Her big flashing eyes looked out on the world with laughing courage, her voice rang clear and high through the home of which she was the idol. Then came the time when she must be married. Reasons of State required a closer union between her family and that of a certain prince whose traditions for many centuries had been those of the great Kyoto courtiers. The Samurai girl became the wife of the courtier prince's son.

In passing the threshold of her new home she was required to leave behind all the frank gaiety of the old one; to move warily and timidly, to speak low, to conform in every detail to the elaborate etiquette which had prevailed in the princely household for the last six hundred years. Her mother may only see her at rare intervals and in the most ceremonious way. An old court lady overlooks the manners and habits of the young couple and may enter their apartments at any time to see that all is in conformity with the traditions of the house. So strict are these that even the use of a modern lamp is interdicted. The boy and girl—they are hardly more—are fond of reading. They are expected to pass the long winter evenings satisfied with the tremulous light of a pith wick floating in oil behind the artistic transparencies of a lacquered lantern. Fortunately the young Prince sympathizes in his wife's tastes, so, with much secrecy, a modern lamp has been smuggled into their splendid rooms. After this has been lighted some confidential attendant is posted to apprise them of the duenna's approach. At the first rustle of her silk robes along the distant passages, the warning is given; then the lamp is extinguished and slipped into a cupboard; and when the old lady comes in on her tour of inspection, two mischievous young people are mournfully contemplating each other by the beams of the night light. That there is much smothered laughter, after her departure, goes without saying; but how impatiently must the girl long for the breezy rooms of her old home, full of air and sunshine by day, flooded with electric light at night! She has to breathe the confined airs of an ancient world—in inner apartments of gloomy splendor; she can make no changes while her mother-in-law lives; and if these are but the material restraints of her situation, we can easily imagine how galling and depressing the moral ones must be!

But one alliance between the families was not enough; and when the young prince took the Samurai girl for his bride, his sister was wedded to the bride's eldest brother. The little princess, brought up in courtly seclusion, knew as little of modern ways as her imperial ancestresses of past centuries. A delicate, frail little creature, exotic as a rare orchid, shy, silent, with no mind of her own on any subject, except on the one which her parents had called the profanenesses of modernity—sacrilegious innovations which she had been taught to abhor! She came to be the wife of a fine young officer in whose veins runs the most illustrious fighting blood of Japan. His mother wailed over the useless bit of loveliness, and energetically undertook to modernize her daughter-in-law, to the great discomfort of both. When the birth of an heir was imminent, preparations for the great event were made on scientific and common sense lines. Certified nurses, physicians of the highest standing, European baby clothes, all these things frightened the delicate little survival of the old régime half out of her wits. Her own mother must not come near her in her trial; she belonged to the husband's family, and her enlightened mother-in-law was too forceful in person not to be obeyed in every detail.

Stereograph copyrighted 1905 by H. C. White Co., N. Y.

MARCHIONESS OYAMA AND HER DAUGHTER IN THEIR HOME

Feminine types of Japanese aristocracy. The Marchioness is a graduate of Vassar College and believes in Western ideas

Almost at the same time a like event was expected in the other household. But the Samurai mother had to trust her darling to the care of the old princess, who decreed that the old-fashioned insanitary methods should alone be followed, the methods which must account for the alarming infant mortality in aristocratic circles in Japan. There was no appeal from her decisions; mutual friends of both families beheld the strange spectacle of one household where the lady supreme, as she tended her son's wife and the newborn grandchild, kept exclaiming with little snorts of indignation, "Oh, my daughter will not have these comforts over there! Twenty-one pillows the day the child is born—no sleep—a crowd of servants in the room—stuffiness and superstition! Ugh!" while, in the other house, the young mother expectant was being taught all that her own mother unlearned thirty years ago, and had no comforters save the strait-laced mother in-law and the martinet duenna.

How long will it be before the two systems are reconciled? The fate of a Japanese girl of noble birth may throw her into either camp, and no one will ask her opinion or consult her wishes when she gets there. She must take on the traditions of the family to which destiny has assigned her. All this means pain and conflict, and more than one or two generations must pass away before the old beliefs and customs really yield to the dominion of the new.

On one point, however, the opponents meet. In the field of public work the ladies of the ancient régime are as active as their more advanced sisters, seeming to find in charitable and educational societies a needed outlet for their pent-up energies. Then are

Stereograph copyrighted 1906 by H. C. White Co., N Y

A JAPANESE MAIDEN POURING TEA BY THE ROADSIDE—A PICTURE OF THE OLDER JAPAN
The Hanya waterfall in the background

too intelligent not to enjoy the intellectual treat provided by lectures and debates; yet, when it comes to modifying external custom so as to bring the real conduct of life under the principles to whose exponents they listen so complacently, they offer a resistance nothing less than adamantine to the efforts of the reformer. Nothing is more typical of feminine Japan to-day than one of these gatherings, where the defenders of the old and the advocates of the new meet to reap what advantage and pleasure they can from union without yielding an inch of principle on either side. I attended one a little while ago—and the room seemed full of sheathed swords!

The Society is one which has for its object the study and discussion of subjects intellectually interesting to women. The president, an elderly lady of illustrious rank, does

not know a word of any foreign tongue, but has a mind of considerable grasp and power, and has done much to forward the cause of education here. Seeing her presiding at such a re-union, alert, interested, dominant, one would imagine that she must have imbibed Western ideas so far as to introduce them into daily life. But her daily life is that of a princess of the Middle Ages. I drove out to see her soon after the meeting, and found her beautiful dwelling after passing through several streets of houses built on her land and inhabited by the retainers who have refused to be separated from their liege lady. The alleys are well laid out, hedged with close-clipped green; each house stands in its own little garden. The ponderous stone walls of the wide enclosure were pulled down when the Samurai were disbanded and their fortresses destroyed, but they have been replaced by high banks of earth planted with full grown trees. A group of dignified old vassals received me at the door; word was passed to others within; and though the silence of the guarded house remained unbroken, there was as much ceremonial as if I had been penetrating, with sinister design, into the sacred precincts of the Imperial Palace. All this guarding and watching must be hampering in the extreme, and presents a striking contrast to the household

Stereograph copyrighted 1904 by H. C. White Co., N. Y.
JAPANESE RED CROSS NURSES, EXAMPLES OF THE NEW KIND OF JAPANESE WOMEN
Watching a wrestling bout

From stereograph copyrighted 1904 by Underwood & Underwood, N. Y.
HARD-WORKING WOMEN OF RURAL JAPAN
Lake Soji with Fujiyama in the distance

of the princess's son, who has sturdily refused to bring his wife to live with her mother-in-law. The young couple have a charming home not far away, and earlier on the same day I had found them both working hard in their garden, healthily earth-stained and rosy with fun and exercise. That separate establishment looked peaceful enough, but it must have been won at the cost of a severe family conflict.

One curious point which presents itself to the observer is that the women whom one meets at the gatherings of the various female societies (I know of thirteen, but I believe there are more) belong, with few exceptions, to the sturdy Samurai type, that possesses little beauty as a rule. Among the older women the faces are mostly plain, although exceedingly intelligent. The disappointment I always experience on coming into a hall crowded with plain middle-aged women in dark robes, is turned into pleasure when every face lights up with interest in the subject under discussion.

It has been said that Japan's pre-eminence in the East, her astonishing development on modern lines, is due chiefly to the energy and enterprise of the Samurai men; I think it is equally true that the advantages of modern education have been and are more eagerly embraced, its logical consequences better understood, by the Samurai women than by any others in the country. The fine new schools are crowded with the broad-

shouldered Samurai girls; their open faces and fresh coloring are pleasant to behold, but there are few representatives of typical Japanese beauty with its aristocratic fineness of line, its delicate whiteness of skin and slenderness of figure, among the maidens who carry off the diplomas for study and sport. There are many foreign women here who give private lessons in the higher branches of English. All testify to the alert intellect and sturdy working powers of the Samurai girls as compared with those of the children of the old court circles. Even among the people the difference is distinctly seen, for the great ramifications of large families have spread their characteristics through almost every class of society. We have two very young girls among the dependents of the house where I live. One, who should be helping her mother in the kitchen, has all the characteristics of the fine lady—much beauty, delicate hands and feet—and a fixed resolve to do no work of any kind. She has been sent to a foreign school—a doubtful benefit for a daughter of the people—and has turned out a useless little bit of ornament. The other, a bright, willing creature, evidently comes of the Samurai stock. Eager to serve, quick to catch at the advantages offered, she has mastered the intricate service of a big foreign house in a few weeks, and we all, from the head of the family to the numerous tribes in servants' quarters and courtyard, feel that we can depend on the brave little soul to carry out every order and commission with military exactitude.

THE JAPANESE WOMEN OF TRADITION, DAINTY, WELL MANNERED—AND RETIRING

I think many of the parents who formerly belonged to the old camp now deplore the supineness and want of enterprise evident in their daughters. One of the cabinet ministers was speaking to me about it the other day, with deep regret that his own appreciation of modern methods had come too late to influence the mind of the lady he had married

in early youth, too late to make itself felt in the education of his daughter. Immersed in affairs, his time claimed for the country's service, it has been impossible for him to do more than give general directions about the girl's education. Now, when she is nearly old enough to be married, it appears that she is deficient in knowledge of foreign languages, and that, for all her really remarkable beauty and charming manners, she is hardly calculated to prove a useful wife to a busy politician such as her father needs for a son-in-law. For many are the uses of daughters in Japan.

The peculiar constitution of political society here merits a few words of explanation. It is the custom for every ambitious and rising man to maintain a certain number of students, who, in return for the education thus received, become his firm adherents through life. They constitute his political following; they support them through thick and thin; his bodyguard in danger, his applauders in public, his defenders in the press, they come to his aid with every means in their power and often turn the scale for him in moments of political crisis. The most promising, the most talented, of these young men is constantly chosen as a son-in-law, and it is the patron's daughter who must become the bond of union. The arrangement seems to work well on the whole, but especially since the drawing closer of Japan to America and England, the younger men desire wives who can take their places with grace and advantage in public life. "What it would have meant to me to have a wife like that!" sighed my friend. "We have as a nation taken on very heavy contracts in every direction. All our forces will be required to carry them out. The women must bear their share of the burden and we must grant them their share of the resulting advantages. The cultivated foreign women who consent to stay among us and help our women to understand this, will have rendered us a great service."

THE IRIDESCENT GLASS TRUST

COLONEL ARDEN'S HANDLING OF THE MEN WHO TRIED TO BLOCK HIS PLANS—A STORY OF HIGH COMMERCIAL METHODS

BY

FREEMAN HARDING

I

THE windows of the spacious office, a score of floors above the street, commanded a vast prospect of city, bay, and distant hill, cut into vistas by the rectangular bulks of many-storied buildings. In the centre of a big, soft rug stood a mahogany desk, its richly gleaming surface half hidden under baskets of correspondence. Set in its polished top were many electric buttons, and near them stood a couple of telephones, beribboned in different colors.

Before this desk sat the well-known financier, Colonel Nathaniel Arden. In spite of his ample girth and sixty years, his bearing was of a robust vigor. The majestic dome of his bald head was pink above the hat line; while the rest of his complexion was tanned an out-of-door brown. He was looking absently out of a window, his gaze ranging over innumerable roofs which sheltered men with whom he worked, as well as human wolves not of his pack, from whom he had snatched great possessions.

"Well, Chris," said he, turning toward his secretary, "I reckon it is about time to get to work. Bring in Dinker first."

The secretary promptly ushered in a sandy-haired young man with pinkish whiskers, whose light blue eyes shone with expectancy. A twinkle of amusement sparkled in Arden's eye as he caught sight of the ingenuous face of his caller; but, rising, he extended a hand in ceremonious welcome. Dinker beamed self-consciously.

"I am right glad to see you," said the banker, "I want to have a long talk about your glass business."

Dinker, immensely gratified, sat down and began a prolix conversation, to which Arden paid considerate heed. Then an intrusive telephone demanded the financier's attention, and the high tenor of the young man became silent.

"Go on," said the Colonel, "I can follow you."

For many minutes Dinker struggled to continue his narrative while telephone signals tinkled in different keys, and the busy financier talked, amicably, humorously, or threateningly, with different people, filling in the scant intervals by fingering electric buttons which summoned clerks, and admitted callers who asked for "only a word."

An admiring wonder replaced Dinker's gratification, which, in its turn, gave place to irritation. At last, in desperation, he rose from his chair.

"Colonel Arden," he protested, with fretful dignity, "I prefer not to go further into matters until you have time to listen."

"I have heard what you have said," was the cold business reply. "Your industry is in a bad way, and you want some one to pull it out of the mire by consolidating the iridescent-glass concerns into a trust."

"Yes," eagerly responded Dinker, "that's it."

The Colonel drew out his watch. "I am due at a directors' meeting. Pack a grip and meet me at Pier 'A' by five o'clock. That is the place"—he pointed downward out of a window at what, from that height, looked a tiny basin on the harbor's edge. "I want you to go home with me on my yacht and stay over night. No telephones to interrupt," he added, with a bantering smile.

"Thanks for your offer of hospitality," Dinker replied, his face shining. "I shall be there." He ardently shook the Colonel's hand and passed out into the anteroom. One of the many men waiting there sprang precipitately from his chair and, jamming his hands deep in the pockets of his baggy trousers, leaned forward, an incarnate interrogation point.

"Well?" he demanded vehemently.

"Let's get outside," was Dinker's response. They passed into a broad corridor, behind whose walls of latticed steel elevators swiftly shuttled up and down. Doors opened with a metallic crash; men and boys were vomited forth; others hurled themselves into the scarcely halting cages which fell out of sight. In response to the imperative "Going down!" of an attendant, they entered a car which, after pausing at one and another floor, became "express" and dropped earthward with a sickening rush. The gates slid apart and, jostled by those behind them, they stepped into a vast hall, lined with marble and brilliant with electric light. It was seething with people whose hurrying feet shuffled softly over the rubber tiling, for the servants of the players of the game were in frantic motion.

Dinker noticed the doorway of a café which opened on the lobby.

"We'd better go in there," he suggested. "It's as good a place as any for us to talk. We must order something," he added, as they seated themselves. He held up two fingers to the waiter, who nodded.

"Well?" repeated Trevis, irascibly.

"That Arden is a big man," said Dinker with solemn earnestness, "biggest I ever ran up against. By George! he sees what we're after. If he takes the deal up, our job's as good as done. Here's luck."

Putting down the empty beer mug, he waved an important hand.

"I must be at Pier 'A' by five o'clock to go with him on his yacht to his country seat and stay over night. Mighty glad I brought my Tuxedo. On the boat Arden and I can thrash things out with no interruptions. Shouldn't wonder," he added, tucking his short thumbs into the armholes of his waistcoat and inflating his chest, "if we settled everything to-night."

"Am I to go, too?" demanded Trevis fiercely. "Did you tell 'im I was along with you?"

"Didn't have a chance," answered Dinker deprecatingly; "he rushed things so. Terrible busy man. Has a lot of telephones and electric buttons on his desk. Played on 'em like a piano. I was interrupted all the time."

"You were in there most an hour," shrilled Trevis. "There was lots of time to tell 'im. You want to be the whole thing. Don't try any funny business with me!" he added threateningly. "If you do I'll bust the deal."

"Now don't take things that way," remonstrated the worried Dinker. "You are so hot tempered. We've time to burn till five o'clock. Let's go and see some of the sights. Come along!"

Sulkily Trevis acquiesced, and they passed out into the jostling Wall Street crowd.

II

Dinker, suitcase in hand, stood upon the pavement bordering the yacht basin. Before him lay the wide sweep of the bay, crisscrossed by the wakes of innumerable steam vessels whose big tumultuous waves swept through the openings in the granite breakwater and tossed uneasily the small boats lying under its protection. Outside a half a dozen steam yachts awaited their owners, gently swayed and drifted with the tide. He jumped and twisted around as a heavy hand slapped his shoulder, and the high, nasal voice of Elkanah Skeener greeted him.

"Hello! Dinker. Arden told me where to find yeh. Why didn't Trevis come?"

"He did. He's stopping at the Waldorf."

"You ought to hev brung 'im along. Give me that," and he seized upon the suitcase. "Here comes the old man," he added, as an electric cab drew up to the curb.

Arden got out and, bowing cordially to a waiting group of half a dozen men, walked toward the landing stage. "Gentlemen, we had better get on board," he said.

A four-oared barge lay alongside the float. The guests were helped in, the owner took the tiller ropes, and at his curt "Give way" the boat shot out of the basin and headed over choppy seas toward a big, high-sided steam yacht.

Dinker—an inland man—clutched nervously at the gunwale as the boat bobbed about, and convulsively started as the spray of a whitecap flecked his fingers. A mountainous ferryboat, her overhang shadowing the cockle shell, swept by. He looked with dread at her swift moving bulk, then, noting Arden's unconcern, took heart.

To Dinker as they drew alongside the pleasure craft she seemed as large as a liner. Sailormen helped him to the deck. His "derby" was taken from him and replaced with a yachting cap. In a moment the yacht, getting under way, swept around in a magnificent curve and headed up the Hudson.

The guests bestowed a half hostile scrutiny on one another as the host made them acquainted; for all had their own axes to grind. Dinker, who had pictured to himself hours passed alone with the great man, felt chagrined at the presence of others. But, when he had accepted a highball and a cigar from an assiduous steward, and had settled himself into a roomy wicker chair, the confusion and wonderment of his bewildering day gave way to a sense of luxurious comfort.

"If Maria could only see me now," he purred.

"Gentlemen," said the resonant voice of Arden, "we dine informally on board in half an hour. Skeener," he added abruptly, "come below."

"Yes, Colonel," was the obsequious reply.

In a few minutes a steward requested Dinker to join Colonel Arden and conducted him down the companionway, through a spacious saloon and into a completely equipped office. A typewriter was clicking in the corner, and near the desk, where Arden sat, stood Skeener.

"Take a chair," said the Colonel. "I have been going over matters with Skeener, and am inclined to undertake the consolidation he urges. I already have a number of irons in the fire," he continued, with a smile of the lips unechoed by the eyes, "too many, perhaps, and must have the assistance of a man who will eat and drink nothing but Iridescent Glass; that is the diet Skeener is eager for. You can treat with him as you would with myself. Now we will go to dinner."

By the time that the guests had adjourned to the deck, they were approaching the private pier of "Surcease." From the landing they walked up a flight of steps, followed an ascending path, and arrived at a rambling house which loomed huge in the darkness. For an hour Arden exerted himself to entertain his guests, pouring forth one funny story after another. Then, announcing that the yacht would start for the city at seven, he bade them a good night like a benediction, and disappeared.

The next morning a gentle tapping caused Dinker to open his eyes. He jumped out of bed and, throwing open the blinds, drew a deep breath as he looked across broad waters to precipitous mountain flanks glistening green in the rays of the sun. Dressing hurriedly, he walked downstairs and, escorted by Elkanah, found his way to the waiting vessel.

When the last belated guest was on board, they all sat down to a luxurious breakfast. As they once more stood upon the landing-stage, after the return trip, Skeener sought out Dinker.

'My room is number 2030 Arden Building," he explained. "Same floor as the old man. He likes to have me handy. When can you meet me there?"

'I must hunt up Trevis first. He was jealous about not going on the yacht. I'll run up to the hotel and bring him down. We mustn't fail to keep him in line."

'I guess I know how to handle him, all right. Don't you worry," responded Skeener with a conceited grin.

Dinker found Trevis smoking in the café of the Waldorf.

Did you speak to Arden about me?" asked Trevis in a strained voice. There was a flush on his cheekbones.

"Why, of course," lied Dinker boldly.

'I'm ready to start any time." said the mollified man.

III

Skeener was standing near Arden's desk, impatiently awaiting the conclusion of a telephone conversation. As his chief hung up the receiver he leaned over him and began to talk in a hoarse whisper.

'Everybody but Medlar's here," he was saying. "They're rounded up in my office; and they're beginnin' to quarrel. That man Trevis is a nasty talker and he stirs 'em up. Dinker wants to be president because he's got the biggest factory. He's the dull son of a smart dad who made the business. Trevis is thick with 'im."

'Don't bother me about such matters," said Arden testily.

"But, Colonel," urged Skeener. "I shall be a worryin' till these fellers is eatin' and drinkin'. I want to get them options signed up to-day, and it's time for you to take a hand."

'Very well, bring them around," said Arden wearily.

The huddle of manufacturers greeted with respect the man of millions whose name was so often in the papers. He shook hands and then led them into a luxuriously furnished lunch room. As the lunch proceeded, the host guided the conversation with easy skill.

'Gentlemen," said he at last, when the cigars had been lit, 'I want to thank you for your courtesies to Mr. Skeener. As a result of his visits to you, he has been impressed with the critical condition of the irridescent-glass trade. I understand that the seven factories have lost three hundred thousand dollars during the year. If you get together, the present heavy loss will be replaced by a heavier profit; and the values which you have created by years of hard work may be capitalized into cash and dividend-paying securities. I am prepared to furnish the necessary financial support."

Trevis, who had been made irritable by the champagne, broke in:

"That's all good enough talk. But I'm after cash. I want to know when and how I git my money. And I want your word behind Skeener's."

Arden fixed his stern eyes on the man, and bored him through with a look. Trevis tried hardily to return the glance, but blinked and dropped his eyes.

"I must go now," said the financier. "You can learn any other points from Mr. Skeener. Skeener, if you want to take our friends for a sail, the yacht is at your orders." With a dignified wave of the hand, the Colonel left them.

At first no one spoke. Finally, Joe Loeb, a plethoric German with kindly eyes and beer-puffed face, broke the silence.

"Dot iss a goodt man," he said, as he pulled at a big cigar. "He iss all rigdt. Ve can drust 'im."

"Anybody else got anything to say?" queried Elkanah.

"Who's goin' to be the officers?" asked Trevis. Dinker wants to be president. If he is, I won't go in."

Dinker's face reddened angrily; then the color died out and left it white.

"I thought you were my friend," he said, with reproachful bitterness.

"I am. That's why I don't want you for president. You'd rattle round," retorted Trevis spitefully. "Scales is my man. He knows how to keep his mouth shut."

"It's too soon to talk about officers," broke in Skeener, anxious to end the quarrel.

"Here are the options," slapping on the table a sheaf of printed sheets. "I've got to have ninety days to turn around in. You're to git cash for yer real estate, machinery, materials, and goods, unless you'd ruther hev bonds or preferred stock. And you'll git common stock for your patents and good will. The bonds'll be 5 per cent; preferred stock, 7 per cent. cumulative. There'll hev to be an underwritin' syndicate to raise the

money. Fellers that subscribe'll get the bonds at 90, besides 5 per cent. commission and 25 per cent. in common stock."

"Schemin' to take more money out of us," sneered Trevis. "When you git through cuttin' off slices, there'll be mighty little left."

"Ef any of yeh wanter jine in the underwritin', yeh kin, on the same terms as me and Arden. The options bind yeh to stay by the new company fer five years. Of course, you'll git big salaries, every one of yeh."

Noting that the last remark had made a good impression, Elkanah distributed the blanks and smoked fast, furtively studying the faces of the six men who were poring over the options in silence.

"Is it all right, Loeb?" he asked, as the German laid down the paper.

"Dot iss all rigdt," he answered, and appended his crabbed signature to one of the forms. Moved by his example, one by one, they all signed except Trevis; who put the blank in his pocket.

"I'm goin' to sleep over this," he said, "see you about it in the mornin'."

"I aint very busy to-day," explained Skeener, with noisy cordiality, "and I want yeh all to go to Coney Island with me. We'll git back in time for the theatre, and after that's out I'll show yeh round. I know this little town of 'York."

IV

Skeener and his guests had been dining on the broad piazza of the Manhattan Beach Hotel at Coney Island, and their heads were now bunched together. They were listening to their host who, in a voice louder than he knew, was outlining the plans for the organization of the new company and explaining the method that was to be followed in marketing the securities. Now and again Trevis, who had taken more than was good for him, broke in with bitter gibes at the Colonel and Elkanah, who vainly tried to mollify him.

Happening to look up, Skeener saw, standing behind Trevis, "Blinker" Foxley, Arden's bitterest enemy, who was looking from under his eyelids at the surf and the bathers.

"Evening, Skeener," said the operator indifferently, as he sauntered by.

When he had recovered himself Elkanah proceeded to entertain his listeners with yarns of the dramatic coups for which "Blinker," as he was nicknamed, was famed. He showered on him ungrammatical abuse for his notoriously disreputable methods; and —greatest sin of all—for his unscrupulous opposition to Arden, who, it seemed, had not always come out on top.

It was midnight when they separated at the Waldorf, leaving the discontented Trevis sitting alone in the cafe, taking a final smoke, while he turned his manifold grievances over in his mind. He felt a light touch on his shoulder.

"Saw you with Skeener at Coney Island this evening," said a level voice. "My name is Foxley. I am alone, too. I hope you will be kind enough to help me out," he added, as the waiter put before him a napkined bottle.

Trevis, who had been feeling low spirited, was more than willing. He was interested in knowing this enemy of Arden; for, just at present, he hated the Colonel. Soon the two men were clinking full champagne glasses, and speedily the sparkling wine began to stir Trevis's blood.

"I presume you are in the railroad business," remarked Foxley.

"No, I'm a glass manufacturer," was the reply.

"Didn't know that Arden had interests in that line," commented Foxley, once more filling the empty glasses and furtively watching Trevis from under lowered lids.

"He haint," answered Trevis irascibly, "but he's tryin' to git hold of some fer less'n they're worth. Are you a friend of Arden's?" he demanded.

"I doubt if he counts me so," was the cautious reply.

"Neither am I," snarled Trevis. "He sent that feller Skeener to a lot of us manufacturers tryin' to git control of our properties to put 'em in a combine. To-day his man handed us what he called an option. The others signed up, but I told 'im I was goin' to sleep on it. I've read it a dozen times and I don't see where I come in. What do you make out of it?" he asked, passing the paper to Foxley, who read it through twice, very deliberately.

"I make out of it," he answered, handing it back, "that you are to part with your business at a price fixed by Arden's appraisers. You can be sure that it will be low enough. Besides, you must tie yourself up for the five

best years of your life without any guarantees from him. If he changes his mind, he can drop you. All Arden's jugs have the handle on one side; his side. It would be folly to sell to him unless he pays you all cash and a lot of it. If he doesn't treat you right, come and see me at my New Street office. If you can give me inside facts, I can find a way to use them so that you can make something worth while; and you will be glad you own a factory instead of some inked wood pulp in the shape of stock certificates."

They sat together into the small hours. Foxley's low, monotonous voice explaining possible methods of putting spokes in the Colonel's wheel. Trevis, calling to mind the banker's contemptuous manner to him, breathed hot threatenings. When Foxley said good night, there was a sardonic glint in his narrowed eyes.

V

Archie Jennings, Arden's partner, was idling in the office when Skeener came hurrying in.

"Colonel," he said, in a worried voice, "I can't seem to handle that fellow Trevis. He's worse'n ever to-day and rows me all the time."

"Archie, I reckon you will have to help Skeener out," said Arden.

"Where is he?" asked Archie.

"He's in my office; and he's swearin' that we're playin' favorites in payin' fer properties. He's strikin' fer all cash; a quarter of a million! twice what his business is worth. Talks big, and says ef he don't git what he wants, he'll smash things."

"Bring him to my room and leave him with me," directed Archie serenely.

When he opened the door of Jennings's office, Trevis found the young man seated at his desk. Without rising, he pointed to a chair. Trevis sat down, crossed his legs, and nervously wiggled the suspended foot. Archie lit a fresh cigarette and, as he smoked, kept his steady eyes fixed on the man before him, but said nothing.

Restless under the steadfast, impersonal scrutiny, Trevis glared defiance.

"I want to say," he burst out menacingly, "that you Wall Streeters can't do me out of my property. And you can't buy it with your bonds and stocks. I'm goin' to have cash down; two-hundred-and-fifty-thousand-gold-dollars. And I am goin' into the business ag'in if I want-to."

Jennings continued to look quietly at the angry man, and to draw gently on his cigarette.

Leaning forward, hands in pockets, arms akimbo, eyes snapping, Trevis went on:

"I give you fair warnin' that, if I ain't treated right, I'll smash the deal. I've been talkin' to a big Wall Street man that knows the ropes. If you try to sell stock the way Skeener talked about, he'll drive it off the 'curb'."

"So Foxley is coquetting with you?" remarked Archie, with an amused smile.

Trevis started. "How do you know it's Foxley?"

"I know that he makes a business of butting into things by breeding trouble. He will use you, and when he has squeezed you dry, he will throw away the skin. Curious what fools grow in some towns," he added meditatively.

Trevis jammed his hat on hard and got up, bristling with outraged self-esteem. But Archie, paying no attention to his threatening aspect, went on.

"I have agreed," said he, "that you should be more liberally compensated than the audit and appraisal of your business justify. Dinker urged it. Skeener asked it. For, though you have been acting badly to both of them, they are friendly to you." He laid his watch on the desk.

"I stand ready to pay you fifty thousand cash, fifty thousand in preferred stock, and fifty thousand in common stock. My offer is open for exactly five minutes."

"I'll be cussed if I take it. I'll cut prices all to hell," screamed the angry man.

"My dear fellow," answered Archie, lighting a fresh cigarette and lazily watching the smoke as it drifted upward, "cut away! That mortgage on your factory is due inside of six months. Do you think it likely to be extended? Do you know that Arden & Company have bought it? Not to hurt you, but to clear the property of a lien. You have a good many notes out. If you make us lose money, you must lose money yourself. Under such conditions, banks are likely to think twice before renewing your paper. Don't be foolish!" he added, arnestly. "Don't try to hold up the train by getting on the track. You're not big enough and you

will be run over. Jump on board and ride with us." Glancing at his watch, "You have exactly one minute," he said.

Trevis's seething brain, which had been exulting in his power to enforce his demands, began to consider the other side. It conjured up pictures of heavy losses; pressure from creditors; the enmity of powerful people. Then he remembered the wife at home and the little children; he could not, dare not, imperil his ability to care for them. Foretasting the bitterness of surrender, he clenched his hands and trembled.

"I'll take your offer," he said, in a dull voice.

"Now, that is sensible," responded Archie, with a gratified smile. "Probably you don't know that Dinker is to be a vice-president. We want you to manage his big factory as well as your own. They are close together. Of course, you must be on the board of directors. We have fixed your salary at five thousand. I hope you won't think it illiberal. It seems to me your position will be much improved. The cash will more than pay your debts; and the dividends on your stock, with your salary, will total twelve thousand dollars a year. But you are worth every cent of it to the company. You see," continued Archie, leaning forward and grasping Trevis's hand, "we are not such bad fellows to work with."

The pressure was returned by the dazed and speechless man. Tears stood in his eyes and he choked back a sob.

"I'm your man," he said brokenly.

BRIDGING THE GORGE OF THE ZAMBESI

THE ENORMOUS SPAN FLUNG ACROSS A CANYON 350 FEET DEEP JUST BELOW THE GREATEST CATARACT IN THE WORLD—THE ADVENTURES IN ITS BUILDING—THE MOST PICTURESQUE LINK IN THE CAPE TO CAIRO RAILWAY

BY

A. T. PRINCE

ASSISTANT ENGINEER FOR THE CONSTRUCTING COMPANY

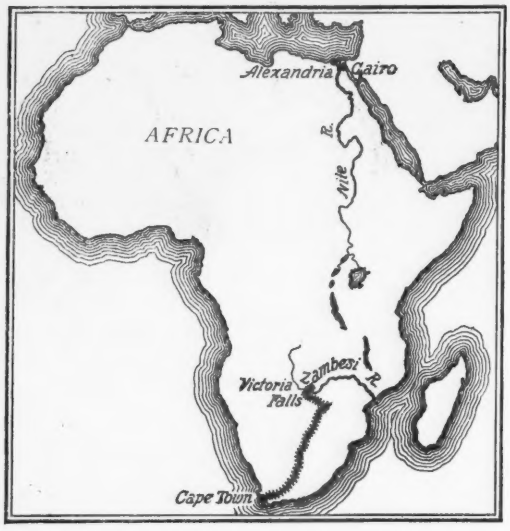
THE Victoria Falls Bridge across the gorge of the Zambesi in South Africa, within sight of the Victoria Falls, the greatest cataract in the world, is now opened to traffic. On the day of the formal opening in October, the first long train, draped with flags, came slowly to the centre of the new structure, where a fuse wire had been stretched. Professor Darwin, President of the British Association for the Advancement of Science, made the speech of dedication. The wire was then fused, and the bridge declared opened. Thus, after a picturesque and unusual accomplishment, was completed the most interesting link in the great scheme of African railroad extension that emanated from the brain of Cecil Rhodes.

In May, 1903, the bid of the Cleveland Bridge and Engineering Company, of Darlington, England, for the making and erection of the bridge was accepted by the Rhodesia Railways. A little later in the year, Mr. G. G. Imbault, as the representative of the Cleveland Bridge Company, went out from England to the bridge site in the heart of the wilderness, to face the engineering problem of flinging a cantilever bridge 650 feet long across a chasm 350 feet deep. He was accompanied from Buluwayo by Sir Charles Metcalfe, chief engineer to the Rhodesia Railways, and Mr. Townsend, chief resident engineer. At that time the rail-head of the Cape to Cairo line was nearly one hundred miles from the falls, and from this point the party had to make a rough journey overland, to reach the place where their task confronted them.

On their arrival at the falls, Mr. Imbault at once took steps to open direct communications with the opposite side of the river, for

intercourse up to this time was by boat at Livingstone drift some four miles up the Zambesi. The whole country round the falls was quite undisturbed. Game abounded. Sir George Farrar, who was there at the time, shot a fine buck within a few yards of the bridge site.

Communication was soon established. A light line attached to a rocket was shot over the gorge, and then used to haul across stronger lines. Then rope followed, succeeded by a wire cable of sufficient strength to carry a small load. This cableway was worked by a hand winch. Passengers were taken over on a bosun's chair suspended from small pulleys running on the cable. A telephone was also strung across.



THE LOCATION OF VICTORIA FALLS
And the southern end of the Cape to Cairo railroad

In the first week of March 1904, Mr. Imbault, who had returned to England in October, I, and the first detachment of English workmen, started from England for the falls. We traveled from Cape Town to Buluwayo in the train de luxe, which is wonderfully comfortable and rather upsets the ideas of those who come to Africa expecting to have to rough it. There are many trains in Europe which would suffer badly in comparison.

From the rail-head, however, we had to finish our journey part of the way sitting in the trucks of a construction train and part by post cart. The post cart trip of about thirty-five miles occupied two days instead of ten hours, as we had expected and provided for. On the second night, from a distance of five miles, as we approached, we had a superb view of the spray from the falls lighted up by a full moon. This spray column, we afterwards found by measurement, rises more than two thousand feet into the air on a calm day with the river in flood.

On the following morning we saw the falls themselves, and those who have not been fortunate enough to see them can form small idea of their grandeur. They are nearly 2,000 yards wide and about 350 feet high, twice as wide as Niagara and nearly 200 feet higher. I leave the photographs to speak for their appearance.

After looking at the falls, we examined the site of the bridge, and my first impression was that it looked a fairly awful place to build a bridge over, though, of course, this feeling wore off after one grew used to the problem. The site chosen had given rise to much adverse criticism both in England and in Africa, the critics saying that such a natural wonder as the falls should not be allowed to be desecrated by any of man's handiwork—that the bridge ought not to be within sight of the cataract. But apart from the fact that the site chosen was the best possible one for a bridge, on account of a buttress of the precipice on the Cairo side which made the span appreciably shorter than it could have been elsewhere, it was said, by those in a position to know best, that Cecil Rhodes had expressed his wish that the bridge should be built within the spray area, near the falls, saying "I want the spray to fall on the carriages."

After the bridge was built, some of the critics changed their view, and we heard many visitors declare that the bridge actually enhanced their idea of the falls and the gorge, for the size of the bridge posts are well known, and, in position, compared with the immensities about them, they look very small. The design of the bridge, moreover is so sympathetic and graceful, while not losing its effect of strength, that no one can reasonably maintain that it is an element of ugliness in the scene.

The structure is a rigid trussed arch of five hundred feet centre span, with two ordinary lattice girder shore spans of sixty-two and

THE VICTORIA FALLS BRIDGE
With the mist of the falls in the background

one-half feet and eighty-seven and one-half feet, respectively, to carry two lines of railroad. It is thirty feet wide between parapets. The depth of the main arch at the bearings is one hundred and five feet, and, at the crown, fifteen feet. The bridge was designed by Mr. G. A. Hobson, of Sir Douglas Fox & Partners, and Sir Charles Metcalfe, who are, jointly, consulting engineers to the Rhodesia Railways. The parts of the bridge were made in England and shipped out ready to be put together.

The start of the erection was greatly delayed, however, by the deceptive appearance of the surface rock of the foundations on the Cape side. Instead of being practically solid rock, as was anticipated, it proved to be almost anything else. A depth of fifty feet below the first estimated depth had to be reached before the required solidity of foundation rock was reached. During this work the spray was very heavy, sometimes falling all day with the force of a heavy shower. In consequence, with perhaps a little help from other causes not water, several of the workmen we brought out from England had to leave the country on account of bad health. Malaria, fever, and dysentery were the chief evils from which the men suffered.

The spray also made the surveying work for setting out the bridge, which had of course to be very accurate, rather difficult, as one frequently had to wait a long time for the mist to clear before being able to see across the gorge. But by the end of July, the cableway for conveying the parts of the Cairo half of the bridge across the gorge was completed. This cableway was capable of carrying ten tons. It was built with a light fixed tower on the Cairo side and a shear-legs hinged on pins with a counter-balance weight on the Cape side. The tension on the cable was balanced by the rising and falling of the counter-weight. The conveyor was worked for lifting or traveling by the driver inside and was not dependent on anyone on land except for its motive power—electricity.

The cableway, although the great heat and a very moist atmosphere due to the spray counted against it, did very good work. Besides taking over the bridge material and the construction plant, it also conveyed forty miles of track material, and a quantity of rolling stock and other equipment for the

THE MAIN FALL

northern extension of the line between the beginning of August and the end of March. The building of this line was carried on simultaneously with that of the bridge.

The shore spans were erected on timber trestles, or false-work, the one on the Cape side nearly 100 feet high. As soon as the concrete foundations were ready, the building of the main arch was proceeded with, starting on the twenty-first of October.

Early in November the only accident that occurred during the building of the bridge took place. The top piece of the end post on the Cairo side jammed hard when the erectors were trying to place it in position. The crane driver tried to lift it out with the crane. Naturally the crane was not equal to lifting the whole post, with the result that the gear broke, the piece fell sideways, and trapped one European and one native, killing both of them. Luckily for the bridge, the piece of post fell upon the horizontal strut, and was at once picked up.

The end posts were completed late in December. The arch then progressed rapidly, and, notwithstanding a stoppage of some weeks for material, the arch was joined in the early morning of April 1st. In the last twenty-four working days some 500 tons of steel were erected by an average of twenty-one men. In all 1600 tons were erected in a little more than nineteen working weeks, which, considering the distance from the Darlington Yard and also from the port of entry, the scarcity of white labor, and the rather trying climate, was not bad work.

The arch was erected as two cantilevers. The two arms were anchored by steel wire ropes of high breaking strain, secured to the top of the end posts, and effectually fixed in the solid rock behind the shore spans. The steel was handled by means of two ten-ton electric cranes, traveling along the cross-girders. They were designed especially for the bridge by Mr. Imbault, and were very successful. The joining of the arch was practically perfect, proving how excellently the bridge had been made in Darlington. The arch as manufactured was within half an inch of the amount required.

We employed a great number of natives of various tribes during the work. Their views, and those of their various relatives and friends, were sometimes amusing. At first all ridiculed the idea of a bridge being built across the gorge. When the debris

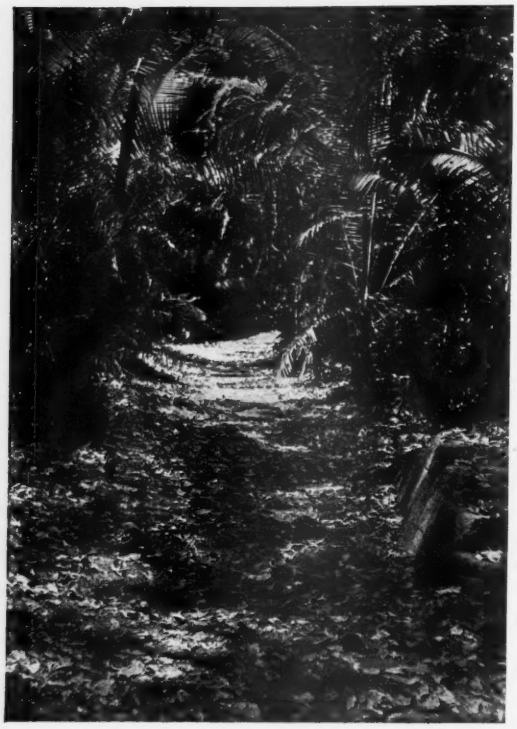
A VIEW FROM THE EASTERN BANK OF THE RIVER

VICTORIA FALLS

The great cataract of the Zambesi, three times as wide and more than twice as high as Niagara

from the foundations was being tipped into the river, they imagined that we were going to fill up the gorge, but thought it might take rather a long time. The erection of the end spans on false work was simple to them. But when they saw the cantilever arms growing out from the precipice on each side, with no apparent support, they were mystified.

A chief near by was asked by his collector what he thought about it. He replied, that the playmates of the gods could of course do anything, and went on to say that, evidently



PALM GROVE ON THE CAIRO SIDE OF THE ZAMBESI
Near the falls

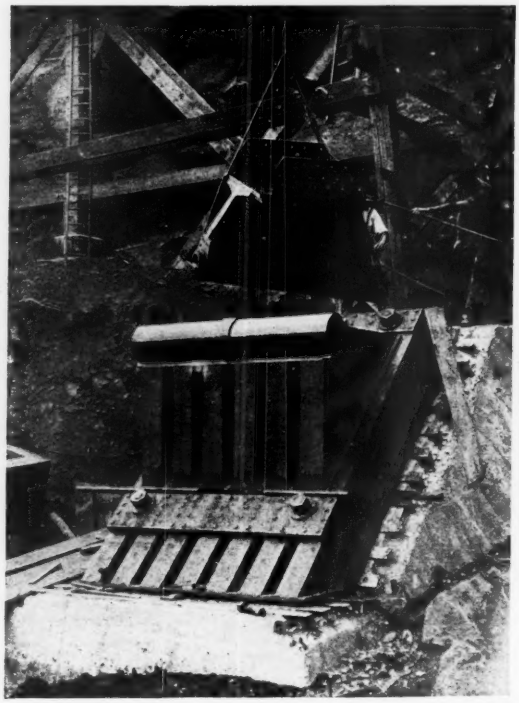
the chief god of the white man was holding up the two sides until further orders. Another always predicted disaster, and kept his unbelief until the bitter end. When he saw the arch joined, he pinned his faith to a tragedy for the first engine and train that would pass over. He was convinced that the bridge would fall down as soon as the train reached the middle. With a view to seeing his prophecy fulfilled, he came with a full retinue, including many wives, and saw the trucks come over. We believe that he was sadly disappointed, and that the faith of his tribe in him as a prophet has waned.

The riveting up of the bridge proved to be a more formidable undertaking than had been anticipated. Several of the riveters we brought from England were unable to stand the climate, and we had to depend largely on the men in the country. We found that an average day's work in England and in Africa were two very different things. Although we had good hydraulic and pneumatic equipment, the rate of progress was rather slow.

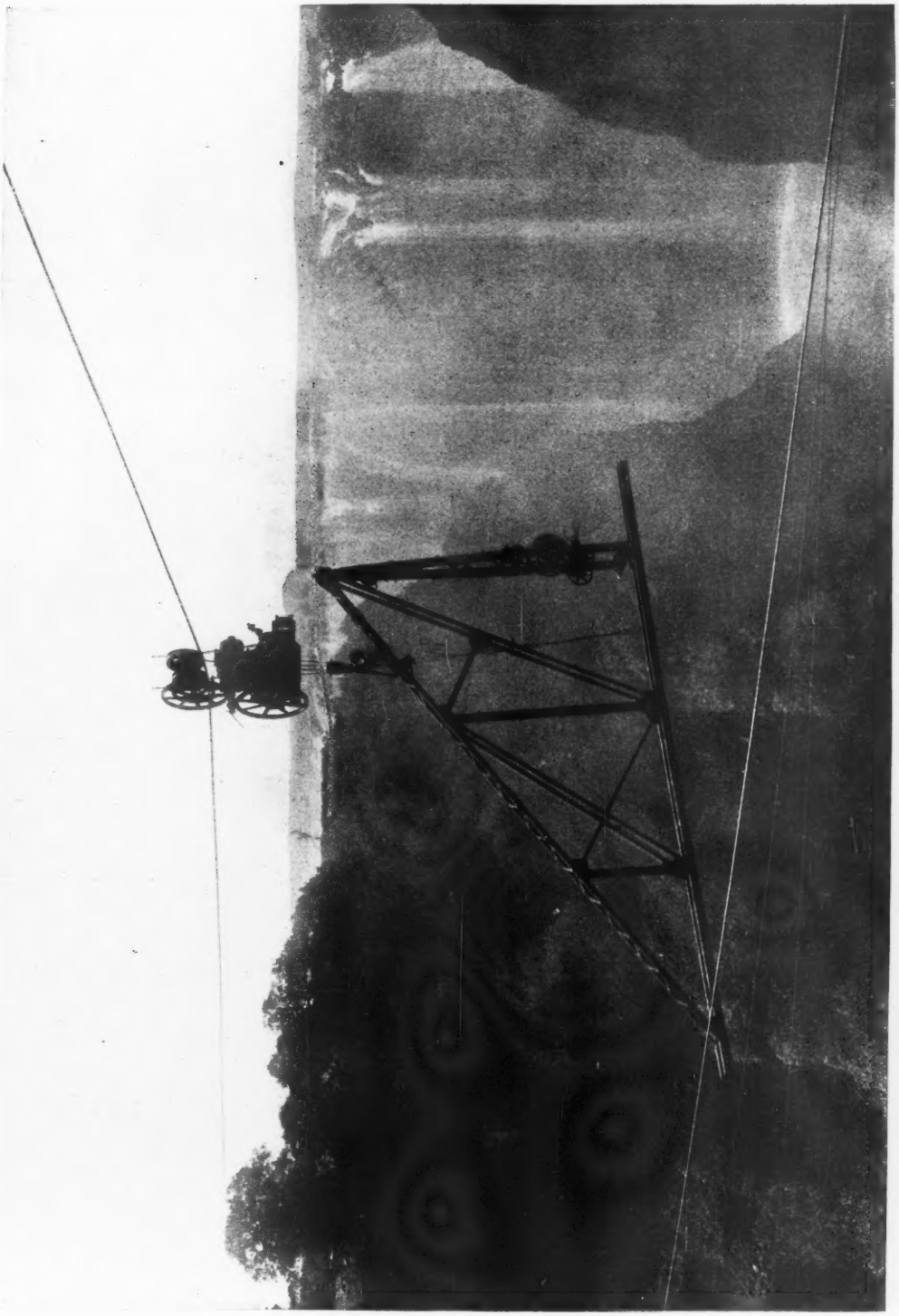
An interesting incident occurred during the riveting. A leopard, which had previously devastated the hen roosts of everyone in our locality, besides taking sundry dogs and cats, was run over by an engine one night. He had apparently been dazzled by the head-light and had lain on the track. He was seen by the driver, who pulled up. The skin was found to be scarcely damaged.

The deep pools among the islands in the river were the haunt of numerous hippopotami, which, although peaceable most of the year, if left alone, at certain times became dangerous. We were chased on one or two occasions when in Canadian canoes, but never came to grief. Others were not so fortunate. Three canoes were overturned in one week. In one case one of the Civil Commissioners' native paddlers was drowned. In another, the man overturned lost his rifle and other gear and had to swim to one of the islands, where he remained all night.

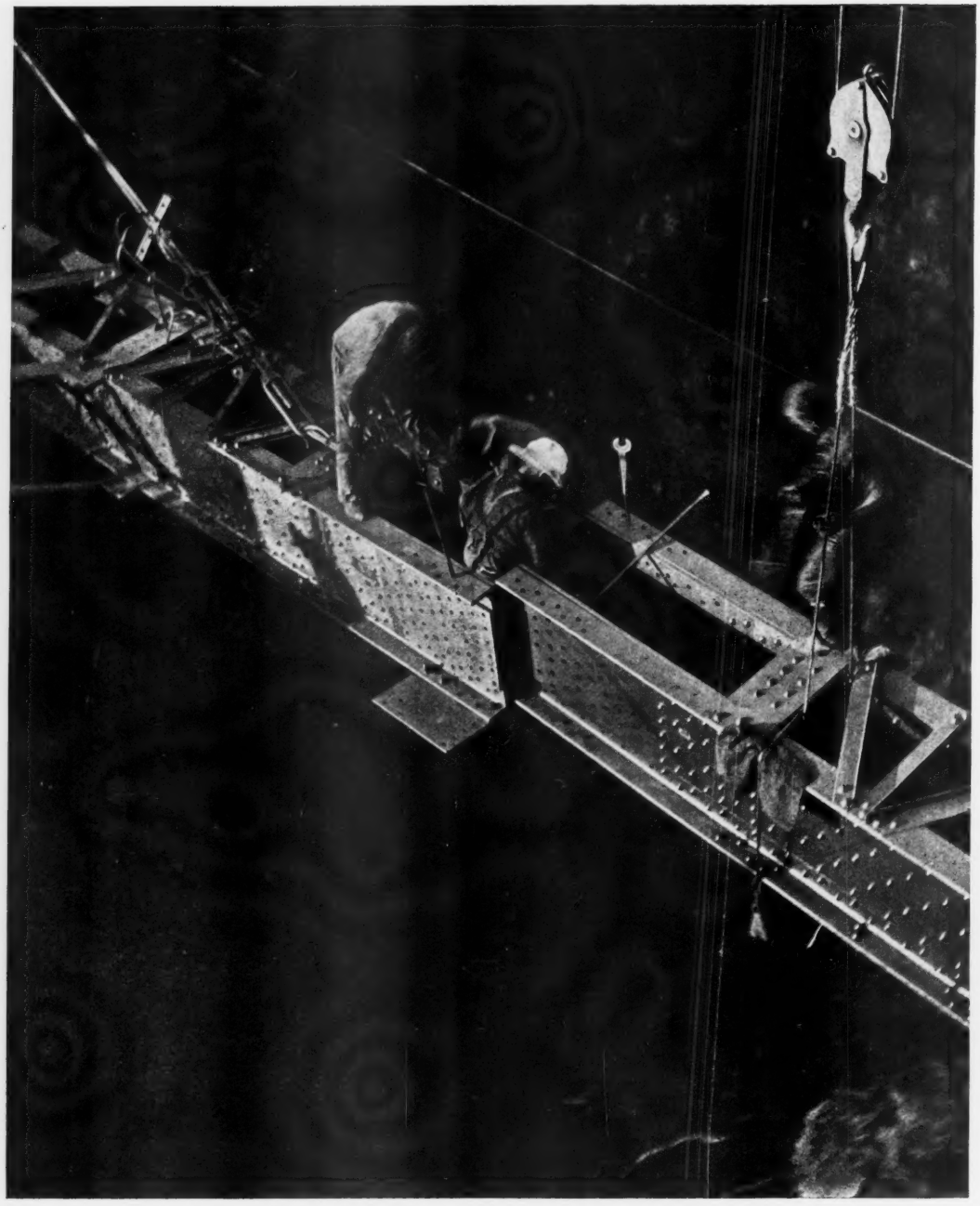
Another adventure, that befell two of our riveters, is perhaps worth recording. They went a little way along the gorge and there found the remains of a reedbuck. They started to cut out the horns. Suddenly they heard a growl behind them. Turning, they saw a lioness with two cubs, who was evi-



MAIN BEARING OR END SUPPORT OF THE BRIDGE



RUNNING A CRANE ACROSS THE GORGE ON THE CABLEWAY

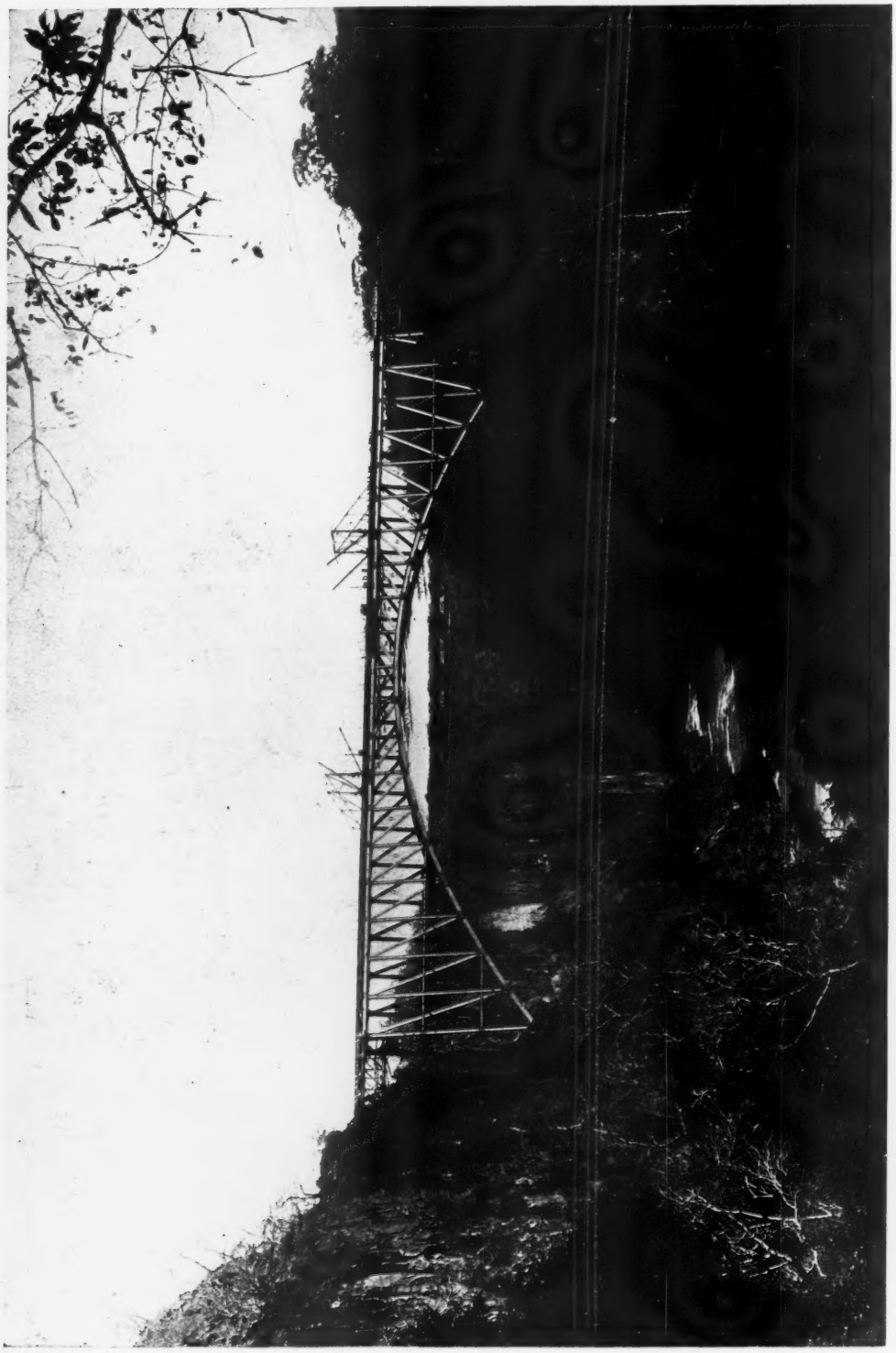


TICKLISH WORK, 350 FEET ABOVE THE ZAMBESI

dently annoyed at this interference with her dinner. The two men did not stop to argue, but made a bee line for the gorge, down which they jumped—about as dangerous a proceeding, one would think, as facing the lion. Luckily they stopped sliding a good way down, and returned very much bruised and excited. The lioness was followed next day for some distance, but the party were unable to come up with her.

The bridge was formally opened in October by Professor Darwin, President of the

NETS SLUNG TO CATCH FALLING TOOLS OR MEN



SETTING THE LAST RIVETS IN THE BRIDGE

British Association for the Advancement of Science, which was holding its annual meeting in South Africa, by invitation of the South African Colonies. Many well known scientists, professors, and engineers were present: Sir Benjamin Baker, Sir C. Scott Moncrieffe, Lord Ross, Sir William Crookes, Sir R. Jebb, and others in a party of 200.

When the first long train bearing the visitors ran out on the bridge, representatives of Northwestern Rhodesia, including the Administrator and Mr. R. T. Coryndon, were waiting on the other side to receive them. Sir Charles Metcalfe spoke, and then Professor Darwin made a speech and declared the bridge open. The several trains conveying the Association came over the bridge, and the members were then shown all the beauties of the falls and the islands.

The line that crosses the bridge is now being extended to the Northern Copper Company's Broken Hill mine, of which great things are expected. There is no doubt that the line will go on and complete the scheme of Cecil Rhodes, which Sir Charles Metcalfe and Sir Douglas Fox & Partners are now carrying out. The work is being pushed on rapidly. On the section now being laid down one track-laying gang laid more than five miles in one day of nine working hours.

The next great scheme at the falls will be the utilizing of the water power for generating electricity. The amount of flow varies considerably in the wet and dry seasons, but there is of course ample for any demands that can be made upon it, without undue interference with the falls. It is expected that in the near future when the railway to the north has tapped the rich mines that undoubtedly are there, an industrial township will spring up in the neighborhood of the falls for the purpose of treating and concentrating the ore that is not rich enough to pay for the long journey now required.

THE FIRST TRAIN TO CROSS

BRILLIANT CLOUD EFFECTS ALONG SNAKE RIVER

THE SCENIC MARVEL OF IDAHO

THE SNAKE RIVER, A THOUSAND-MILE STREAM, WHICH FLOWS THROUGH BAD LANDS, OVER A PRECIPICE FIFTY FEET HIGHER THAN NIAGARA, AND AGAIN AT THE BOTTOM OF A MILE DEEP CANYON—A LAND OF WONDERS

BY

WILLIAM HOWARD KIRKBRIDE

The imperfectly known scenic wonders of the United States convey enough suggestions for vacation and adventure to fill many summers of the hardiest lover of the wild. Articles similar to this about other regions will follow. The camera is now really for the first time making it possible to convey even a good hint of these yet little visited regions.

THE world is less familiar with the Snake River of Idaho than with any other river of importance in the United States; and yet it is our seventh largest river—more than a thousand miles long. It is one of the most wonderful and impressive water-ways in the world. The few who have tried to follow its winding course through wild and forbidding extents of lava plateaux, do not wonder that so little is known of it, for no railroads traverse the lifeless desert that borders it, and no boats, for hundred of miles at a stretch, dare ply its waters. It is navigable for only one hundred miles from its junction with the Columbia to the Idaho boundary, and in several isolated sections of the interior. For the greater part of its course it flows through old and magnificent canyons of its own making through desolate and awful wastes, the result of vomiting craters and of convulsions of the earth.

It dashes and roars, in whirlpools and rapids, through forests of mighty pines, between snow-capped peaks, beside extinguished craters, through gloomy chasms, amid an indescribable chaos of weird and fantastic masses of molten rock, crags, peaks, and precipices, through naked deserts; and, again, broad and tranquil, it ripples through smiling meadows, and green, fertile valleys, past prosperous towns and thriving communities,—and is lost again in the deep and solemn canyons.

It rises in the Rocky Mountains, on the southern slope of the Great Divide, and flows southeast, and then west, in a great serpentine curve through Southern Idaho. In the western part of the state it bends sharply northward, and for 250 miles forms the boundary line between Idaho, Oregon, and Washington, and finally empties into the Columbia, twenty miles below the Oregon boundary.

At first it is a mere mountain torrent made up of melted snow from the Teton range. Then for many miles it flows majestically through a silent wilderness of primeval forests, mirroring an endless chain of rugged peaks. Then a great and awful change begins to take place. The deep woods grow

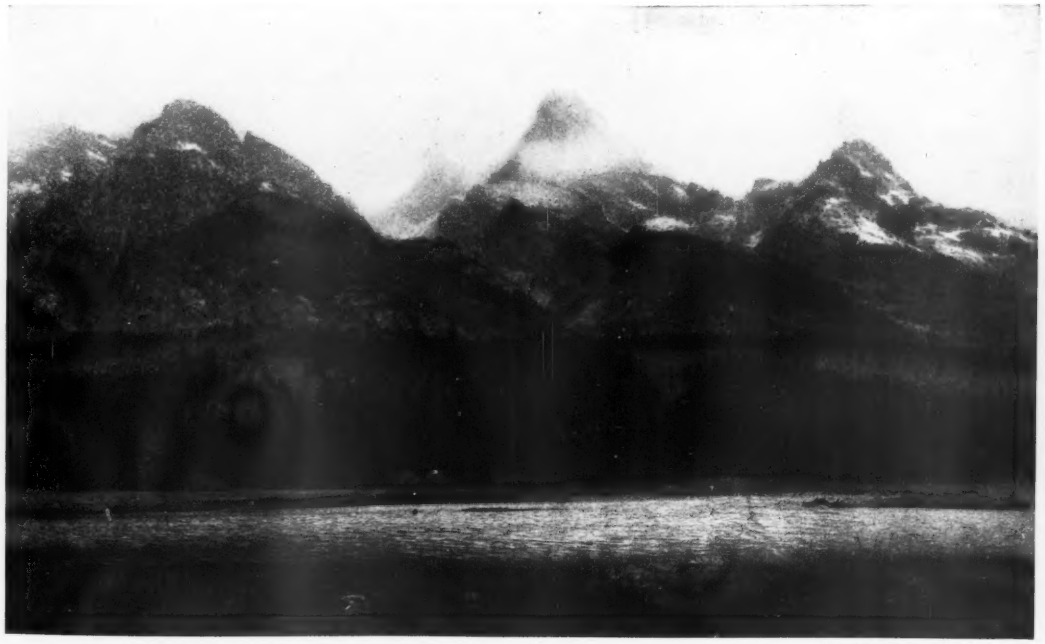
Copyright, 1904, by Fair and Thompson, Lewiston, Idaho

MOUNTAIN SCENERY IN THE SNAKE RIVER COUNTRY

less and less dense, the mountains decline into endless rolling hills and deep ravines. At every turn the country grows flatter and more featureless, until a great plain stretches out indefinitely, the gloomy barrenness of which is emphasized by the few pyramid-like cones which stand there, solitary reminders of a dead and terrible period. It is the great Snake River Desert. After an observer's first shock and his feelings of isolation have passed, the boundless plain loses its monotony. The expanse seems to awaken and throb with life, the silent sentinels of the desert tell a tale of long ago, when mysterious forces were at play. For this is the field of the most gigantic volcanic action that ever occurred in America.

Curious evidences of the terrific movements that once took place are apparent at "Cinder Buttes," sixty miles west of Blackfoot, in many well preserved volcanoes of comparatively recent date. The plains are strewn with vast numbers of cinders, bombs, and other volcanic relics.

For 350 miles after passing the Blackfoot River, which joins the Snake River from the southeast, not a stream reaches it from the north. Many streams rise in the Salmon River Mountains of Central Idaho, all tending toward the Snake River Canyon, but all, sooner or later, are swallowed up in chasms, or are evaporated by the intense heat and dryness of the desert. The "Big Lost," and the "Little Lost," rivers, both



Copyrighted 1905, by H. C. Myer

WHERE THE RIVER FLOWS THROUGH SNOW-CAPPED, TIMBERED MOUNTAIN PEAKS

HUGE, TERRACED BLUFFS OF NAKED ROCK

of some magnitude, which rise in the mountains and flow in a southerly direction into the Great Desert, vanish there. But after traveling many miles beneath the lava beds of the desert, the pent-up waters break from their bondage into a series of remarkable cataract-springs farther down the river. For twenty miles they gush at intervals from the canyon wall, in ever-flowing streams.

The greatest and the most beautiful is near the town of Hagerman, and is known as Thousand Springs. For a half mile, and from an elevation of from seventy-five to two hundred feet, whole rivers gush forth from the roots of the sage-brush, sometimes in broad white sheets of waving mist, superb in color, like small Niagaras, but more often in a series of tiny falls and glittering cascades, which leap from rock to rock, and finally dissolve in spray as they crash upon the rocks beneath.

The seepage from these lost rivers has wrought other astonishing results in the canyons of the desert. In several places great side alcoves extend northward from the main canyon. These in no way owe their existence to the action of the Snake or other streams. The most noted is the "Lost," or Blue Lake Canyon. It is an immense semi-circular chasm, some two miles long, with perpendicular walls more than 500 feet high. No streams enter from any direction, but at its head and mouth are mammoth springs, discharging many cubic feet of water per second, which have formed two dark blue lakes. The water from these spring-fed

Photographed by H. C. Myers

WHERE THE SNAKE HAS EATEN ITS CANYON THROUGH THE WILDERNESS

lakes, by erosion and by concentration of energy, has eaten its way through solid basalt rock, forming a deep cut canyon.

No other river has as many magnificent cascades and water-falls as the Snake. The greatest is Shoshone Falls. Its volume is less than that of Niagara, but the fall is fifty feet greater, and during the spring flood it is as great a wonder as Niagara. At Idaho Falls, the water throws itself abruptly over a great ridge of basalt rock into a narrow trench below. The American Falls, farther south-central part of the state, namely, Shoshone, Auger, and Twin Falls, all within a short distance of each other.

Just before reaching Twin Falls the river is separated by a rugged wall of rock into two turbulent streams of great velocity, which, in the fall of 187 feet, tumble, roaring, into an emerald lake beneath. The waters then rush into another canyon, the walls of which are more than 800 feet high, and din and uproar give place to a deathlike stillness. Before one has had time to grow accustomed

LOST IN THE DESERT CHASMS

"Lost" or Blue Lake Canyon, through which the waters of the two spring-fed lakes run out to the river

down the river, is even more imposing, for the volume of water is much greater. The Snake broadens before reaching the falls, and then takes a mighty plunge of more than fifty feet. At Salmon Falls, near the mouth of the Big Wood River, the stream dashes, in one cascade, over a declivity thirty feet high. There are many other beautiful falls, all of which would be more or less famous were they not overshadowed by the grandeur of the three cataracts in the to the silence, there comes, up the river, a muffled roar, like approaching thunder. It is the distant booming of Shoshone Falls. Deeper and deeper grows the canyon, until it is a thousand feet deep; wider and wider grows the river until it is a thousand feet wide; louder and louder grows the booming, until it deafens with its loudness. A bend in the river—and there are the falls.

The river rushes down first with a fall of thirty feet, through rocky channels; and then

assuming the form of a Moorish arch, four hundred yards in width, it takes a precipitous plunge of 190 feet into a smoking abyss below. With a crash and roar that can be heard for miles, the sheet of water hurls itself upon the rocks beneath. Some of it is whipped into threads by the wind, and falls in a never-ending storm of rain-drops.

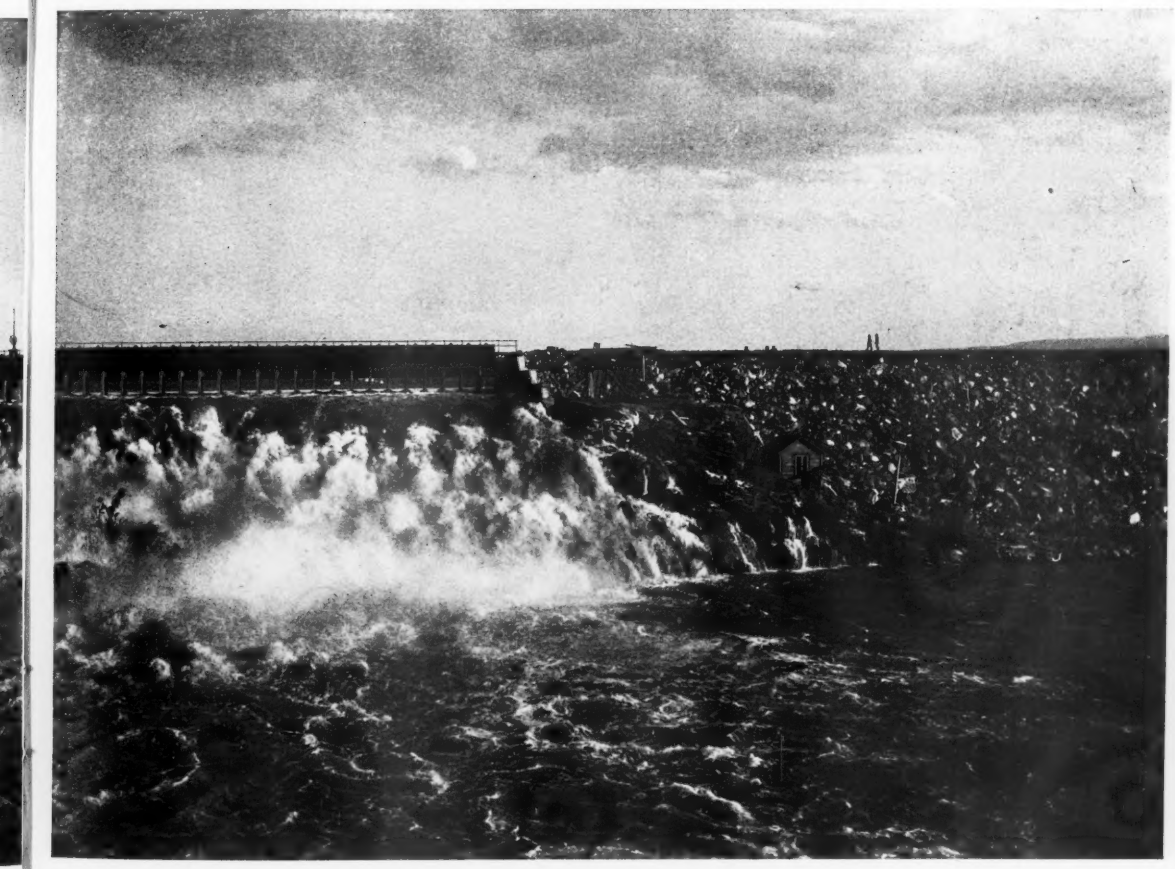
It can readily be seen, from the number of falls, that the amount of water-power available for irrigation and other purposes is practically unlimited, and yet, owing to the isolated section through which the river passes, its waters have scarcely been utilized. Recently, several extensive irrigation systems, involving much capital, have been established to reclaim the desert wastes of the interior. The success of agriculture in Idaho is dependent, almost entirely, upon irrigation, and, except in those places where the flood plains of the small streams have been cultivated, there is little or no farming. The soil, which is of volcanic-alluvial formation, is fertile, and yields enormous crops when watered. It is safe to assert that the larger portion of South-Central Idaho will some day be one of the most productive districts in America. At a point six miles from Minidoka, the United States Government has built a dam across the Snake, thus raising the river to a height of fifty feet. A large part of the flow is then diverted into channels, from which, by gravity alone, it is distributed over some 65,000 acres of formerly arid land, transforming it into fertile fields and orchards.

THE LARGEST DAM IN AMERICA, IN THE

At Milner, twenty three miles above Twin Falls, the largest dam in America, and the third largest in the world, has been built by private enterprise. From it run two great canals, one of them to the southwest, sixty-nine miles long, eighty feet wide at the

bottom, and 120 feet wide at the top. Two hundred and seventy thousand acres of land have already been made available for cultivation, and several other tracts are soon to be opened.

Aside from the value of the water for irrigation purposes, the power from the many cataracts will some day be utilized. The three great falls afford, at a moderate expense, more than 100,000 horse power, 20,000 horse power of which has already been developed by the Shoshone Falls Power Company at Shoshone Falls.



SNAKE RIVER AT MILNER, IDAHO

Beyond the falls, the river is again united in a deep and narrow gorge. Mile after mile the scenery grows wilder, until the spell of the desert, and even the beauty of the falls, is forgotten in the awful grandeur of the canyons. Between the Payette and the Powder Rivers, the Snake flows through one of the most marvelous canyons in the world. The vertical walls of black basalt rise 5,000 feet, and the canyon is so narrow that from the bottom the sky appears as a slender thread of blue. Millions of rocks of every conceivable size and shape, all curiously worn by time and weather, and twisted and gnarled by heat into weird and fantastic forms, hang over the river. Their monstrous shapes are now repulsive, now noble, as they assume the appearance of prison walls or of cathedral towers.

Beyond the Grande Ronde River the canyon walls grow less and less abrupt, and the river, losing much of its ferocity, glides away from its hiding place, and winds in graceful turnings through a broad expanse of prairie and high plateau. The rolling sage-brush plain, though still barren of trees, is no longer dull. Here and there are splashes of color, and the delicate greens of vegetation. Over all rests the desert haze, lending an exquisite

"THOUSAND SPRINGS," GUSHING FROM THE CANYON WALLS OF THE SNAKE
Supposed to be the reappearance of a lost river, which disappears back in the desert

Photographed by H. C. Myers

softness and gentleness to the scene. To the north and to the south, the view is bounded by an unbroken chain of snow-capped peaks and crags, which seem to fade into clouds as they join the horizon. Above them all, their snow-burdened summits glistening in the sunlight, loom the spire-like forms of the Seven Devils, abrupt and precipitous peaks. Bold, severe, and forbidding, they tower in their immensity, dwarfing their sister peaks, and making the mild undulations of the desert hills insignificant by comparison.

On nearing the Washington boundary the scenery loses much of its wildness, the narrow canyon walls give way to broad and fertile valleys, the deeply eroded plateaux melt into gently rolling foot-hills, interrupted here and there with belts of waving grain. When the soil has been made productive by the presence of rivers and streams, thriving villages appear, amid fields of green, pleasing to the eye after the monotonous gray of the lava beds.

Just above the boundary, at the junction of the Snake and Clearwater rivers, there lies a broad and fertile valley, several thousand acres in extent, surrounded by immense foot-hills. Beneath them nestle the twin cities of Lewiston-Clarkston, a prosperous and thriving community. But one watches, with deeper interest, the wonderful hills, that tower 2300 feet above the river, some sharp and jagged, all denuded by erosion, and thrown together in extraordinary irregularity.

At its junction with the Clearwater, the Snake turns sharply westward. The hills again assume the form of rugged perpendicular walls, the river narrows into a turbulent and broken sea-green stream. Nowhere in the Snake River Canyon is there a better example of the columnar basalt formation than here. In many instances the lava, on cooling, has retained a perpendicular position in the form of columns and pillars, sometimes huge and massive, like the ruins of a Roman temple, but more often in graceful, symmetrical sheets, even and delicately wrought.

For another hundred miles the Snake flows westward through its canyon, until, twenty miles below its Oregon boundary, after a lonely course of 1050 miles, it pours into the mighty Columbia.

A MAYOR OF ALL THE PEOPLE

THE PICTURESQUE STORY OF MAYOR J. N. ADAM OF BUFFALO WHO IS CONDUCTING THE MUNICIPAL GOVERNMENT AS A GREAT BUSINESS ESTABLISHMENT IS CONDUCTED—A MERCHANT WHO BECAME A MILLIONAIRE HONESTLY AND WHO IS NOW REDEEMING A CITY FROM GRAFT—HIS IDEAS ABOUT MUNICIPAL OWNERSHIP AND SOCIALISM

BY

ISAAC F. MARCOSSON

EVERY morning a carriage drawn by two spirited horses dashes up to the Buffalo City Hall. A man with white hair and beard and wearing a silk hat and frock coat steps out. A newsboy rushes up to hold the door and says: "Good Morning, 'J. N.'"—

"Good morning, lad," says the man. Then he steps briskly into the big gray building. It is long before eight o'clock and the scrub women are washing the tile floors. As they see him they say:

"Good morning, 'J. N.'"

'Good morning, ladies," is the reply. It is too early for the elevators to be running and he goes up the steps to the second floor and enters a stately room hung with portraits of Grover Cleveland and other mayors of Buffalo. Here a group of people—peddlers, hucksters, merchants—is already waiting and they too greet him as "J. N."—familiarly but with respect. 'J. N." is James N. Adam, the new Mayor of Buffalo. Nobody there bothers to address him or to refer to him by his full name; it is always "J. N." Yet for twenty-five years that name has been linked with the

highest commercial integrity of the city; and to-day it has come to be a symbol for clean and efficient city government. Formerly the saying in Buffalo was, "Go to 'J. N.' and get your money's worth"; now it is, "Go to J. N.' and get a square deal," and the people get it. He has made a fortune in business with clean hands: he has achieved success in politics without being a politician. He has sacrificed a well earned leisure and comfort for the duties of an office that he has made the busiest and most fruitful perhaps in its history. Under him the municipal government has become a great business establishment with the citizens as stockholders. There are no "insiders."

This hard-headed but kindly mayor was raised in a grim Scotch school. He was born sixty-three years ago in Peebles, twenty miles north of Edinburgh. His father, the Rev. Thomas Adam, was such a strenuous preacher that it was said of him "he danged the goots out of twa Bibles" every Sunday. He was noted for his directness of speech, a quality that his son inherits. The minister put a round stone on his father's grave, whereupon a neighbor remarked that it was a fitting symbol of eternity.

"Na," was the reply. "It shows he was a wheelwright."

J. N. Adam grew up in a pious, intellectual atmosphere, supplementing a meagre schooling with much reading. At twelve he was an apprentice in an Edinburgh dry goods store, making one dollar a week. One of his very best friends was Alec Barrie, brother of J. M. Barrie, the novelist, who was a pupil of Mr. Adam's sister. Meanwhile his brother, Mr. R. B. Adam, had come to Buffalo and established a dry goods business. He persuaded "J. N." to come to America, which he did in 1872 and started a store in New Haven. In 1881 he was visiting his brother in Buffalo. The latter said, "'J. N.,' there is to be a dry goods store in the new White Building. I'd as soon have you as competitor as any one else. Why don't you take it?" "J. N." did take it and founded the firm of J. N. Adam & Co., which became Buffalo's greatest department store. He laid down this rule for his clerks: "Never misrepresent anything; keep your promises no matter what the cost." There was nothing that his clerks could do that he could not do better, from wrapping a bundle to selling a household outfit. This store became known as "J. N.'s," to distinguish it from his brother's which was across the street. He was proud to be called a merchant. Every summer he went to Scotland, where he had built a home for his sister at Bowden.

One day in 1895 some Democratic politicians were conferring about nominations for the Council at the Iroquois Hotel. It was hard to get good men to run—besides, a Democrat had little chance in win. One of the men looked out the window and said:

"There goes 'J. N.' Let's nominate him." He rushed out and brought the merchant in. On being told their purpose he at first protested, saying:

"What do I know about politics? I am only a business man."

But he ran and was elected in an iron clad Republican ward. For years he was the only Democrat in the Council but he was an unterrified minority. He began a systematic study of municipal affairs and acquired a vast fund of statistical information. When he became councilman he sold what corporation stock he had. "I don't want my investments to influence my vote," he said. His colleagues said that he was "hard headed and positive," and that he "poked into things too much," but his honesty became a city tradition. When he completed his fiftieth year in business in 1904 he retired. He was then, as now, the third largest tax payer in Buffalo and a millionaire for, like the late Marshall Field, he believed real estate was the best investment. He had public duties and a fine library to engage his mind, ample means, and an honored name, and he settled down to enjoy the remaining years of his life.

For years a corrupt Republican administration had plundered the city. The county for example, bought an abandoned cemetery for an armory site and a favored contractor got the job to haul away the bones. He was to receive a fixed sum for each skeleton. But every bone was billed as a "skeleton" and the bill was paid. There was a foreman for nearly every employee in the department of public works. Graft was rampant. Last fall the Democratic politicans looked around for a candidate for Mayor. They wanted a man strong enough to swing the rest of the city and county ticket in with him. "'J' N.' is the man" they said. Mr. Norman Mack, Democratic National Committeeman, asked him by

cable to accept the nomination and when he could sail, for he was in Scotland, this characteristic cable was the reply:

"Yes 26 Adam."

When Mr. Adam was nominated the opposition said: "J. N.' is honest but he is an old man." But he surprised them. He upset all electioneering precedents. He spent no money. He had no headquarters. "I carry them in my hat," he said. At a little table in a corner of his old office at J. N. Adam & Co., he transacted all his campaign business. His platform was "Honesty vs. Graft." What he did was to send a frank letter to every voter guaranteeing a business administration and saying:

"I pledge myself, if elected, with whatever ability and experience I may have, to work for your interests, and to see that every man, woman and child of this city enjoys, for the next four years, an honest administration of affairs, and that every one, big or little, gets a fair, square deal."

His opponent, a lawyer and much younger man, started a "whirlwind" speech-making campaign. Mr. Adam sat back and did nothing. His friends became alarmed. "J. N.' you'll get beat," they said.

But the old man smiled and replied: "Have you ever stopped to think that it is only about two weeks before the election that people really become interested?" So he waited while his opponent talked. When he did start campaigning he proved that he was the youngest old man in town. He spoke four or five times a night. His speeches were filled with hard business sense and abounded in epigram. Some of them, like the following; stuck in the people's minds;

Graft is non-partisan.

The way to climb upward is not to live downward.

A public office is not a private graft.

Economy is not parsimony but efficient administration.

The trail of the political dollar should be as publicly known as the route of the Empire State Express.

He was elected by a majority of 10,000. Instead of resting he at once visited a dozen large cities throughout the country, studying municipal conditions. He appointed Mr. Victor Speer, a well known newspaper man, as secretary, and more than doubled his salary out of his own pocket. He did the same with the official stenographer. "You cannot get efficiency with small salaries," he declared. "Men who are inadequately paid find it hard to resist temptation."

His first message to the common council has become a sort of classic in municipal documents. Near the beginning he said:

"I desire to make clear at the outset that as there is no authority in law there will be no toleration in private practice or political interests to direct or control the transaction of municipal business. The affairs of our City are not a question of parties or of politics, but of business pure and simple. In his own business,a man does not submit his affairs to the dictates of political or outside parties. He manages it so that each dollar spent brings in the fullest return. The rule of private business is simply the law of public business. We are employed by the people to work for the public interest. We are not paid by individuals to work for private or corporate interests. Let us all bear this constantly in mind, thereby obviating any future necessity for my impressing it upon your memories.

The Mayor declared for municipal ownership; for lower taxes, adding: "What is fair for an individual tax payer is equally fair for a corporation tax payer. The less it costs a contracter to get a City contract, the less it costs the City for the work done under that contract. Further, the less paid in private transactions, the more paid in public taxes." In closing he said:

"I believe graft should be scotched by not only arresting and trying, but by convicting and imprisoning the grafter, whether he be an office holder or not. Disguise should not be permitted to keep a thief out of jail, and a grafter is a thief in disguise. I will do all in my power to put any grafting public official not only out of office, but into jail. I will do all in my power to expose and punish bribery or corruption or any attempt to wrongfully control or influence the conduct of our public affairs, no matter how high or low the wrongdoer may be."

So great has been the demand for the message from all parts of the world that it has been reprinted twice.

When the people read the message they said: "It's 'J. N.' all over." He had practiced in business what he preached in office. His appointments startled the professional office holders. He wiped out party lines, and recognized no creed. 'Office holding is not an occupation but a service," he said. There had been mismanagement of the

police pension fund, so he appointed a leading bank president police commissioner. To the civil service commission, which audited pay rolls and examined into the fitness of men to hold public jobs, he named, among others, a prominent merchant, an eminent physician, and a union printer. The doctor, for example, takes time from his rich and extensive practice to examine a policeman and a fireman, and the result is that the city gets efficient servants.

"The City charter is old and hampered by useless and contradictory amendments," said the Mayor, so he appointed a charter commission to frame a new charter. The first man he named on it was his Republican opponent for mayor.

It wasn't long before Buffalo realized that Mayor Adam was a real mayor. The corporations found out too. The people complained that the street car service was bad. There was much crowding during rush hours and long intervals between cars. The Mayor got the company's time tables and had them printed in the newspapers. Then he said to the people: "Take these time tables and compare them with the actual running time." Hundreds of citizens did it. In a month the company had put on a hundred more cars and there were no complaints.

For years scores of low dives in Buffalo had corrupted the youth of the city. Many of the resorts were practically controlled by the brewers. "These dives must be closed," said the Mayor. The brewers had been valuable to the politicians, for they gave big campaign contributions. But the Mayor sent word to them to come and discuss the matter. They protested against closing the places. "But I mean to close them," said the Mayor. He had the licenses revoked and stationed a policeman before each place to see that it remained closed.

Soon after he took office the Mayor presided at an investigation of the police department. The testimony was sensational, and clerks from many of the municipal offices crowded into the chamber. Suddenly the Mayor rapped on the table and stopped the proceedings. Searching the spectators with his keen blue eyes he said slowly, 'There are a number of clerks here from other city departments. When we need them we shall send for them." This rebuke sent the idlers hurrying back to their books.

Mayor Adam does not believe in spying but he knows what is going on. He sees for himself. Not long ago a lawyer called on him about a piece of land that the city was selling. The Mayor objected, saying that a certain street intersected it. The lawyer had dealt with other Buffalo mayors and their knowledge of local conditions had been for the most part very vague.

"How do you know this?" he asked.

"Because" replied the Mayor, "I was there yesterday."

Being a business man, Mayor Adam at once set to work to organize the city on a business basis. He said, "I believe in single heads of departments with a definite and fixed responsibility. In a great private business the various departments are not headed by a committee ranging from two to seven members. Each has a single competent and responsible head." He pointed to the case of the great railroads, saying: "Has the Pennsylvania Railroad a commission of motive power? No. It has a superintendent." He had a measure for single head departments drawn and put through the Council, and it has been introduced before the Legislature at Albany.

There are 60,000 Poles in Buffalo. They sent a delegation to Mayor Adam asking him to recognize the race by appointing one of their number a license clerk. He looked at them squarely and said: "License Clerk—name your two biggest men and I will give them high positions." One of them, a doctor, will be Deputy Health Commissioner.

Yet he will defy public opinion if he believes he is right. Recently the Council passed an ordinance authorizing the sale of a strip of land that had been part of the old Hamburg Canal. A big price was offered and most of the citizens thought it was good business. But the Mayor vetoed it with a vigorous message that showed his foresight. He saw that the development of the strip by a private corporation would result in damage suits against the city that would cost more than the price paid. I heard a leading business man say: "Well, if 'J. N.' is against that sale, it is a good reason why I should be."

The Mayor believes in frank discussions. When half a dozen railroads and as many corporations were in a controversy over a strip of water front he invited representatives

from all interests to meet at his home and talk it over. They all agreed to reach a settlement in three weeks.

When he was in business, Mayor Adam worked harder than any of his clerks: He now does more work than any two city officials. He is at his office before eight o'clock, he sees personally every letter that comes and dictates the instructions (often with the law or precedent,) for those that go to various departments. Every letter is acknowledged the day it is received. He knows the system and details of every branch of the City service. Heads of departments are constantly going to him for advice. "I want the people to come to me with their grievances," he says. When his big reception room fills up he does what President Roosevelt does, goes out among the visitors, greeting them cordially, answering with firm "Yes" or "No," never changing his decision and passing quickly from one to the other. The old Negro seeking from him permission to wash buggies in front of the City Hall gets the same courtesy as a millionaire merchant. The Mayor's secretary keeps a record of every visitor and all business transacted in the office in a red book that Mr. Adam scans at the end of the day. His working day runs far into the night, for he takes his official papers with him to his home out in Oakland Place. There his big library becomes the work room. But his firm Scotch mind is not always intent on business and the strenuous affairs of men. It shifts to the pleasant highways of literature too. He has been a prodigious reader. He knows his Browning almost as well as his Burns, and often to illustrate a point he will lapse into a verse from a Scotch poet or quote a sentence from the addresses of the Rev. Frederick W. Robertson—"Robertson of Brighton" so he calls him—a brilliant, fearless and eloquent preacher of democracy in England fifty years ago. The Mayor can discuss the writings of James Bryce as easily as those of John Burroughs.

The Mayor is a liberal churchman. He never gives advice unless he's asked for it. Then he says: "Do the duty nearest you." He is never "preachy." Underneath his sternness of purpose and his direct, almost bluff manner lie kindliness and sympathy. His sayings have become well known. Some of them are:

Some Scots are so canny they are uncanny.

An amateur politician betrays himself by the way he says "damn." But you can always tell a professional politician by the ease with which he says "hell."

Although a massive desk stands in the middle of his office at the City Hall he prefers to work at a small table at the window where he can watch the people cross the square and see the tall buildings loom beyond. His sturdy body fills a big chair: his blue eyes gleam behind gold rimmed spectacles, and thick, snow-white hair crowns his strong Scotch face. He smokes constantly and his mustache and beard show tobacco stains. Although there is usually a half smoked cigar on his table he likes best to smoke a stumpy little pipe. He smokes a Scotch mixture that he imports himself. He learned to use it as a boy in Edinburgh when he first began to smoke and he has used it ever since. A box of it always stands behind him. He smokes strenuously, laughs heartily, and he likes a good joke or a story.

I asked him what he thought about municipal ownership, which he had advocated in his first message:

"I believe in Municipal Ownership," he said: "But it can only be reached by evolution, not revolution. It is essential to good business government. Cities could create a sinking fund out of the revenues they receive from railways and eventually use it to buy the plant. We rent out our street car service, why not rent out the schools, the police and the firemen? There is no revenue from them, yet transportation is as much a necessity as education."

"How may our cities be clean and businesslike?" I asked.

"By paying as they go," said the Mayor. "Let them have a uniform system of accounting. Debts and large public estimates for expenditure are the greatest temptations for graft. There is no need of spending all the money raised. Economy is not parsimony, but efficient expenditure. What we need in every city is good men to hold office. There should be no professional office holders. Adequate salaries mean less stealing. The salvation of a municipality is in the independent voter. People are breaking away from party lines. It is a good sign. I am a Democrat, but I don't believe there should be politics in municipal affairs."

'What do you think of Socialism?" I asked.

"I don't believe in the kind of Socialism that is selfishness," was the reply. "The Golden Rule is the best Socialism."

'How about the vast accumulations of wealth?"

The Mayor pulled steadily at his pipe. Then he said: "I think it is criminal for any one man to accumulate $200,000,000. There is too much fortune making out of prospective earnings. The people should be protected against the rapacity of corporate interests. I think that the result of all the recent exposure will be a more even distribution of wealth and a better middle class, for they are the sinew of the country."

People are beginning to wonder if Buffalo Mayoralty history will repeat itself. Mr. Cleveland became Governor and President. Mr. Adam cannot be President because he was born in Scotland, but his name has been mentioned in connection with the Democratic nomination for governor. When I asked him about this he said: "I don't want it, I didn't want to be mayor but now that I am, I want to do something for Buffalo. The City has given me a great deal. I owe it something, I will try to repay it." The Mayor's pipe had gone out; so he lighted it. Then he said rather wistfully: "Do you know I have wanted to go fishing all my life and I've never had the chance. But some day I'll take a holiday." But he added vigorously: "What we need everywhere is honesty."

We had talked a long time. The Mayor had told me stories about Barrie and the old Scotch days and he had lapsed into the dialect of the mother country. The day had ended and the big gray building was very still. The humblest messengers had quit work and gone home. Outside, the newsboys were calling the last extras. The Mayor rose slowly, knocked the ashes out of his pipe and started to gather up a mass of type-written estimates and documents from his table. They meant work for him far into the night. He crossed the room to get a piece of string, then he stood for a moment in the gathering twilight and said very solemnly: "I am not a reformer, I am only a business man—working. But I believe in honesty in everything."

This is Mayor Adam of Buffalo, a real mayor of all the people.

MUSIC BY ELECTRICITY

THE INVENTION OF DR. THADDEUS CAHILL THAT PRODUCES MUSIC MILES AWAY FROM THE PERFORMER—SETTING UP ELECTRICAL VIBRATIONS THAT BECOME MUSIC AT DISTANT TELEPHONE RECEIVERS—THE STORY OF THE INVENTOR AND HIS REVOLUTIONARY DEVICE

BY

MARION MELIUS

ALTHOUGH electricity has produced many wonders, they have been mainly of the workaday kind. Now an invention has been wrought out that proves that electricity is capable of producing—not reproducing, but producing—music of rare beauty and purity. A visit to a shop in Holyoke, Mass. shows a machine that is really manufacturing music.

Dr. Thaddeus Cahill, the inventor, declares that it is as easy to create music at the other end of fifty miles of wire as to send a telegraph message. At a keyboard of his device a performer—or there may be two—lightly presses down the keys, and at receivers, perhaps many miles distant, music pours forth. In pressing the keys the performer throws upon a wire a vibration—or a set of vibrations—which turns into aerial vibrations or audible music, when it reaches the diaphragm of a telephone receiver. The vibrations stand for notes and tones, and they scurry along to do their work the instant they are released. The performer is conscious only of the music he produces. He does not necessarily hear it. He need know nothing of the mechanical

process he sets in action by the pressure of his fingers on the keys. Yet under his fingers the electrical vibrations act tractably and instantaneously. At will he turns an exhaustless supply of different kinds of vibrations to produce at a distance just the sounds he desires.

Only those wise in electrical knowledge will ever understand just what has taken place in the Cahill laboratory, but in bare outline it is this: An alternating-current generator has been built up for each note of the musical scale. Each of these generators produces as many electrical vibrations per second as there are aerial vibrations per second in the note of the musical scale for which it stands. From the generators a mass of wires leads to the keyboards. The keys operate switches which conduct the desired vibrations from the generators, much as in a pipe organ the player, by pressing certain keys, turns the air from the bellows into different pipes to produce the tones he desires. These vibrations are passed through several transformers or tone mixers to become still more complex, and then the interwoven vibrations go forth on a wire.

Although the process seems involved, the action is instantaneous. The performer presses the key which sets in motion a set of electrical vibrations, corresponding to a note, and in a thousandth of a second the note sounds with perfect distinctness and purity from the receiver, whether it be at the performer's elbow or many miles away.

In the music room where the performer sits, there would be absolute silence, if it were not for the receiving horn placed near him, so that he can judge of the character of his playing. The vibrations do not turn into sound until they reach the telephone receiver. Yet the wires all the time are full of silent music, which could be distinguished if the ear were constructed to catch electrical vibrations as it is to catch aerial vibrations.

In a small dark room close by the music room is a long box in which are 400 telephone receivers attached to the instrument but with their noses buried in sawdust so that their voices are silent. If a handful of them are dragged out of their sawdust bed, however, they sing out loudly on the air. The wires between the instrument and the receivers may be tapped anywhere to give forth musical sounds, and when Dr. Cahill completes his system, he may literally fill the world with a network of music.

The possibilities of this new musical instrument are almost limitless, for not only can it produce the tones of almost all the known orchestral instruments, but it creates musical sounds never heard before. The tones of the different orchestral instruments are secured by mixing with the ground tone one or more harmonics in the required proportions. For instance, at a touch of the third and fourth of the harmonic stops, which are located above the keyboard, something in the manner in which organ stops are arranged, the performer may change a flute-like note to the sound of a clarinet, or, by using all the harmonics up to the eighth, the tone may be transformed into a string sound. Another combination of harmonics gives the strident sound of brass. As a final triumph a musician can so combine the harmonics as to produce musical timbres unknown before. He may develop an almost limitless number of new sounds according as his patience and his soul direct. Electrically he produces the different musical timbres by mixing vibrations of different frequencies. The effect of a full orchestra is brought about satisfactorily when two players are at the key-board.

One of the most remarkable features of the device is the delicacy of control. It lends itself instantly to expression, and responds more sympathetically to the soul of the musician than any other instrument, with the exception, perhaps, of the violin. It is as sensitive to moods and emotions as a living thing. The performer by a mere touch controls the various shades of the notes, and varies them at will. The three musicians who are perfecting themselves in the mastery of the instrument at the Cahill laboratory, find to their delight that all the varying meanings and emotions of classical music may be brought out artistically.

To play electrical music a performer must have some knowledge of the piano and must be a thorough musician. So delicate is the instrument that listeners at a receiving station many miles distant may detect the difference in touch of the players. A Bauer or a Paderewski at the instrument could delight an audience ten miles distant as thoroughly as if the listeners were in the concert hall with the musician. The keyboard has two banks of keys, a row of stops to regulate

the harmonics, and a few other devices which help to determine the expression. But there is not a pipe, a string, or a reed in the entire apparatus. Everything is electrical.

At the receiving stations the device is simply a telephone receiver attached to a large horn, like that of a phonograph. The telephone receiver may not be held to the ear, for the current is so strong that its effects would be injurious. For, whereas a current of only six ten-millionths of a millionth of an ampere is sufficient to produce a sound in an ordinary telephone receiver, in the Cahill system a current of an ampere is sometimes used for an instant for loud tones. In consequence of the strength of the current, the musical tones are not marred by any of the noises along the line such as oftentimes seriously disturb the feebler current of the ordinary telephone.

The invention is not in the experimental stage. The first commercial installation has been completed. The second is being constructed and will probably be placed in New York City as a central station for distributing music. The machine already finished is a massive device of metal and wires. It weighs more than 200 tons and cost $200,000. There are 145 of the alternating generators grouped in eight sections and the switchboards, including nearly 2,000 switches, are in ten sections. Music was sent successfully from Dr. Cahill's original laboratory to New Haven, a distance of 70 miles over a leased wire. In a Holyoke hotel, a mile distant from the central installation, where two receiving horns have been stationed, a large ballroom is filled with the music. There is none of the rasp and harshness of the phonograph about it; its tones are pure, clear, round, and rich. By the very nature of the mechanism the instrument is permanently tuned.

The most important feature commercially of the electrical music is that it may be produced simultaneously in thousands of places many miles apart with as much power as if an orchestra were in every one of the places. Several of the generators for single notes send out from 15 to 19 horse-power. Notes with several horse-power behind them naturally have no difficulty in supplying many receiving stations at once. All that is necessary to release the music at a receiving station is the moving of a tiny switch.

Dr. Cahill plans to place the system at first in theatres, concert halls, restaurants, hotels, and department stores, but later he expects it will come into private use. In small towns where fine music is rarely heard a connection could be made with private homes from the central station in a large city and the masterpieces of music could be heard at will. The electrical music will go over its own wires and not over leased wires. Central stations will probably be not more than fifty miles apart, in order to get the best results. There will probably be operators or performers at the central station for twenty-four hours, and music will be on tap all hours of the day or night. An individual may go to sleep to music or rise to it according to his temperament, and a hostess may furnish an orchestra for her dinner party at the turn of a button. As the system develops, Dr. Cahill is hopeful that in due time there may be four sets of mains fed from the central station, each with a different kind of music, and by connecting the four sets of mains to a public place or a private home, rag-time ditties, classical compositions, operatic, or sacred music may be turned on according to one's mood.

Dr. Thaddeus Cahill, the inventor, is a native of Iowa, but passed most of his youth in Oberlin, O., where he began his experiments with electrical music. Since 1889 he has lived at Washington, D. C. In 1892, at the age of twenty-five, he graduated from the Columbian Law School in Washington, the third in a class of more than a hundred. He was admitted to the bar in 1894, and in 1900 received the degree of D.C.L. from the Columbian University. The study of law, however, did not dampen his ardor for scientific studies, and in the nineties he worked out his musical apparatus to a degree of perfection. In 1903 he removed his laboratory from Washington to Holyoke, where he has since been engaged in building the large machines as well as in perfecting and improving various details.

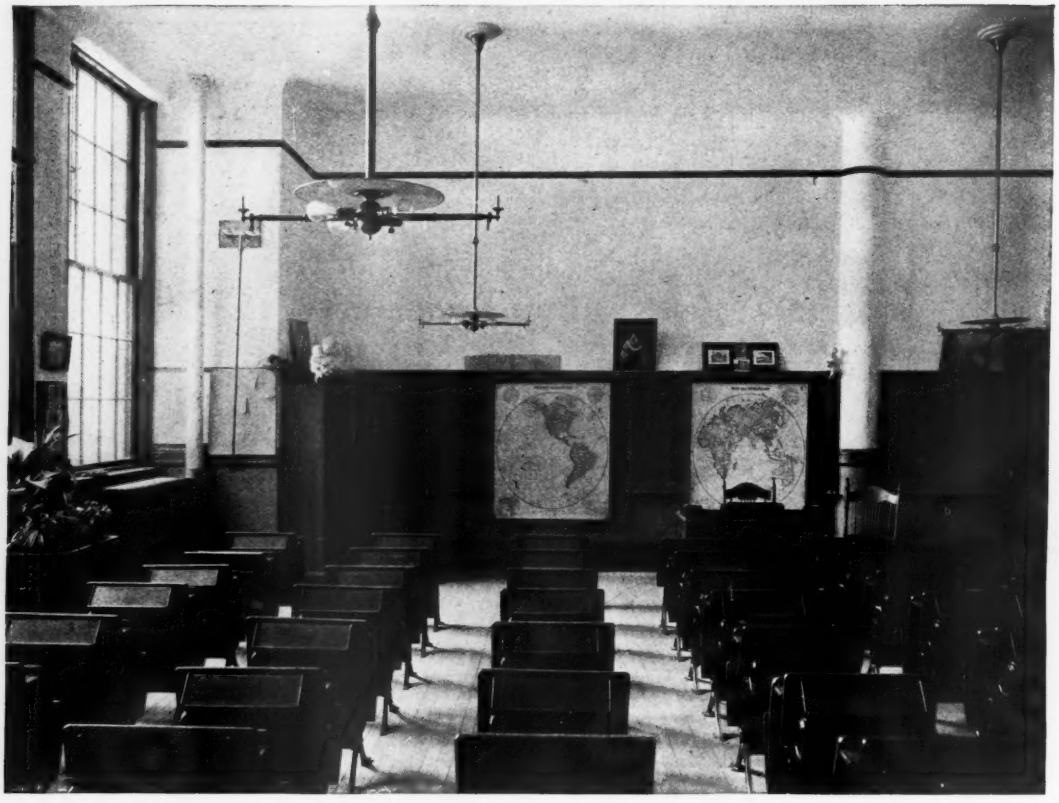
The machine here illustrated is the one built by Dr. Cahill at Washington. It has a special interest as being his first complete machine and the first apparatus ever used to generate music by means of alternators. He built it in the late nineties, experimented with it for several years, and had the satisfaction of exhibiting it to Lord Kelvin at Washington in April, 1902.

THE KEYBOARD OF THE INSTRUMENT FOR PRODUCING MUSIC BY ELECTRICITY

Pressure on a key sets in motion the current of a generator of a particular intensity. The vibrations make tones in a telephone receiver at the other end of a wire connecting with the generator. The variations in the intensities of the different generators produce the differences in the tones. The music may be heard with equal volume in the room with the keyboard or at a receiving telephone seventy miles away

THE EFFECT OF THE H-PLAN ON A SCHOOLROOM

Giving plenty of light with the windows on the northern side of the building



THE MODEL SCHOOL HOUSE

THE H-PLAN BUILDING, A NEW AND SIMPLE DESIGN THAT ALLOWS LIGHT AND AIR—HOW NEW YORK HAS IMPROVED THE VISION AND THE HEALTH OF ITS CHILDREN 30 PER CENT.—NOTABLE EXAMPLES OF THIS SCHOOL ARCHITECTURE

BY

CHARLES C. JOHNSON

TO AN American architect standing in front of the Hotel Cluny, in Paris, in the summer of 1896, studying the notable features of the huge structure there came the solution of a great problem. The architect was Mr. C. B. J. Snyder, superintendent of school buildings of New York City. The solution is now known the world over as the H-plan school building, the architectural device for providing school buildings with the maximum of light and air.

Graham Court, Mr. William Waldorf Astor's apartment house at One Hundred and Sixteenth Street and Lenox Avenue, New York City, is very similar to the Hotel Cluny, except that the apartment house stands on a corner and the hotel does not. The Cluny is without windows at either end, and the street facade is practically a blank wall; yet the peculiar construction of the central court, upon which rooms open from three sides, gives an excellent supply of both air and light.

The old style school buildings, of which perhaps fifty examples still remain in Greater

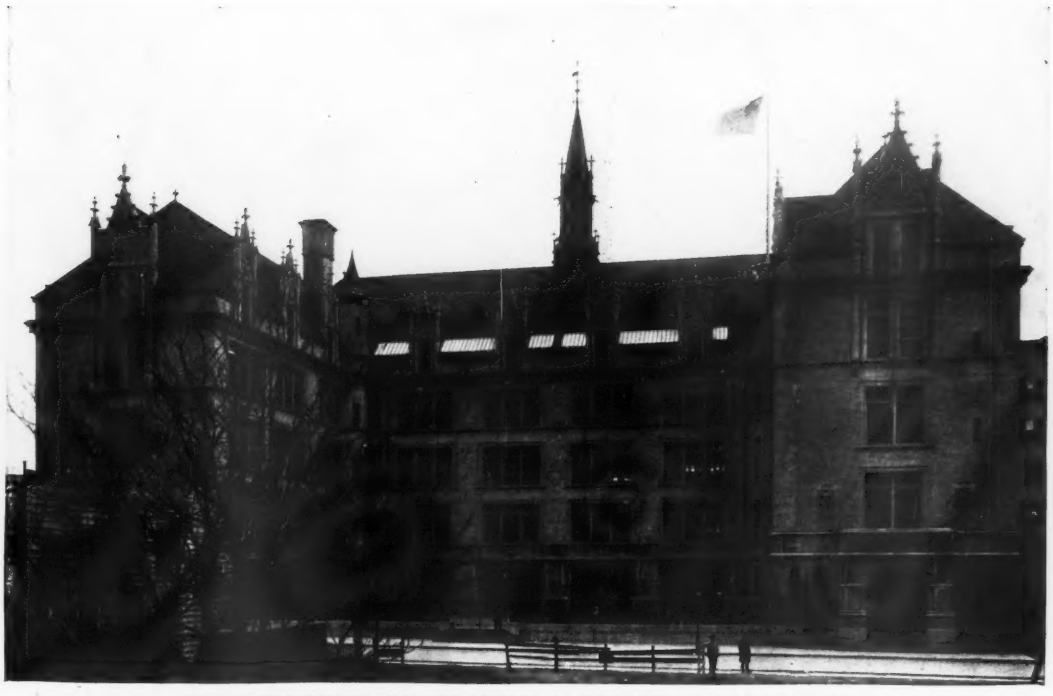
New York, gained light and air from front and rear, and had light shafts, or wells, of varying size and little use on each side, midway of the building. Practically the same plan was followed in building New York apartment houses before the enactment of the present building law. Naturally, the first floor of the public school, a floor then used for class room purposes, was dark and close. In many rooms, artificial light was necessary at all times. Injury to the eyesight and the general health of the pupils was inevitable.

The problem was to get better light and better ventilation. A blank wall at each end of the school buildings seemed inevitable; land in the city is too valuable to permit a vacant space to be left around a building. The H-plan gets around the difficulty. This is a form of building that is like the letter H except that the bar need not be exactly in the middle. One merit it has is simplicity, but its greatest advantage is that it has caused a 30 per cent. improvement in the general health and in the vision of the New York school children.

The old-style building provided about ten class rooms on the first floor, in addition to the main entrance hall, through which the

A PERFECTED TYPE OF SCHOOL ARCHITECTURE

Showing the maximum window and ventilation-space obtained under the "H-plan." The Wardleigh High School, New York City

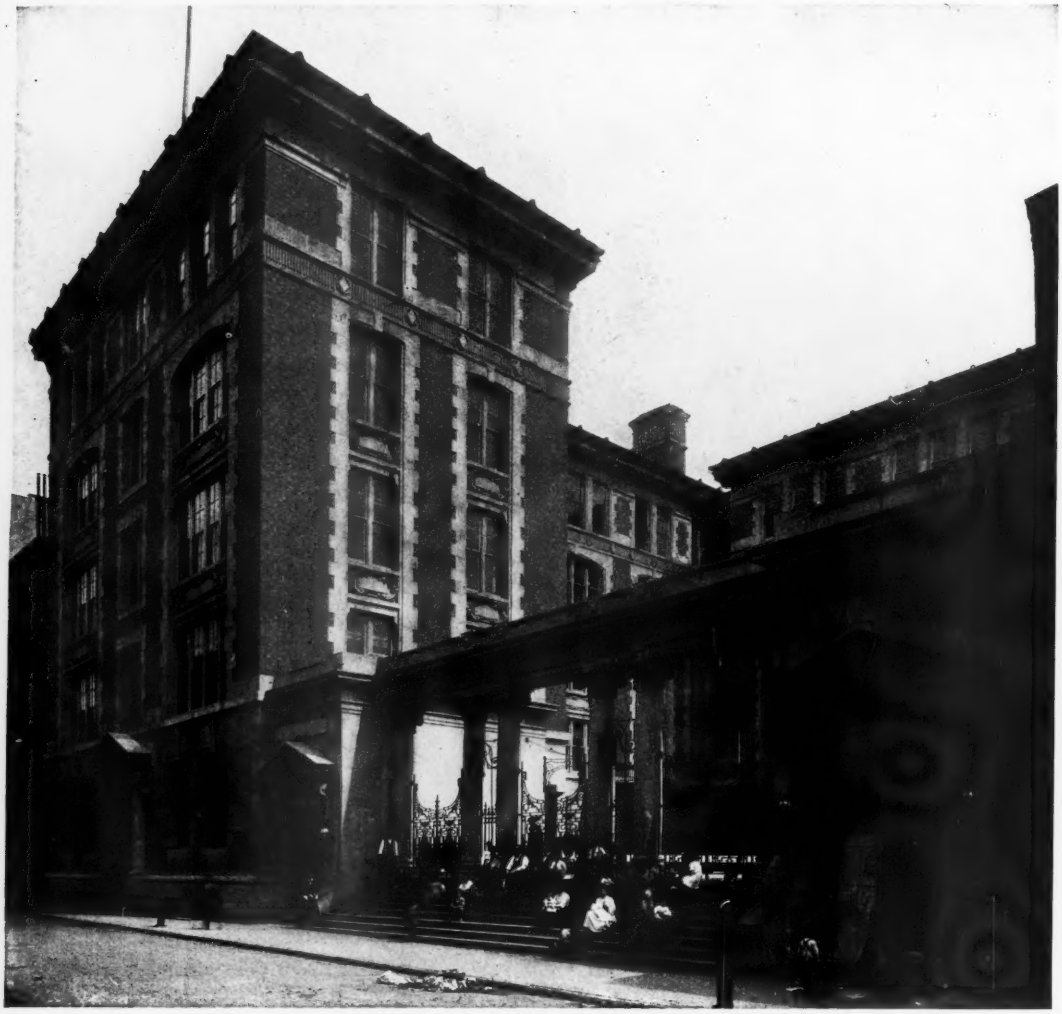


THE MOST MODERN TYPE OF SCHOOL ARCHITECTURE, THE "H-PLAN"

Providing the greatest amount of light and air without loss of floor space. Public School No. 165, New York City

pupils made their way to the rear and up the winding stair-cases. There are no elevators in public school buildings, except in those where machinery has to be transported from floor to floor. Previous to 1891, too, there was little ventilation, Even after the adoption of forced ventilation in 1893, the atmosphere was heavy and unhealthful.

Recently, London sent representatives to the United States to study the H-plan with a view to adoption in the London schools. San Francisco had just completed its first H-plan school building. In many other cities the idea has been accepted. Eighty school buildings on the H-plan are now being built in the five boroughs of Greater New York.



A LIGHT AND AIRY SCHOOL BUILDING WITH AN EFFECTIVE ENTRANCE
On the "H-plan." Public School No. 21, Manhattan, New York City

In the H-plan buildings every room gets light on two sides. The first floor is now not ordinarily used for class rooms; each of the next three floors contains sixteen well-lighted and well-ventilated rooms. Gaslight and impure air have been succeeded by sunlight and ozone.

The average cost of construction is eighteen cents a cubic foot, as compared with the average cost of the so-called fireproof office buildings of fifty cents a cubic foot. The cost of these eighty new school buildings will be $12,000,000, not including the cost of many additions to present buildings. No firm or

corporation in the United States is engaged in building operations so vast as those of the Board of Education of New York City.

Perhaps the best type of H-plan school is the De Witt Clinton High School, on the west side of Tenth Avenue, between Fifty-eighth and Fifty-ninth Streets, New York City. It is 202 feet by 200 feet, and contains a sub-basement, or cellar, a basement, five stories above ground, and an attic. The main entrance to the building, leading directly to this floor is approached through a large loggia, or covered porch. Eight doors lead to the main foyer, from which corridors open right and left. The main floor of the auditorium, and the gymnasium, shower baths, and locker rooms occupy the greater part of the basement. Entrances from three streets lead directly to these rooms by broad stairways. The first floor contains the gallery and upper part of the auditorium, offices for the principal and his clerks and for superintendents, and ordinary class rooms for drawing classes.

With the second floor, the building assumes the shape of the letter H. The roof of the auditorium in the first story and basement stops at the level of the second-story floor, in the large court formed by giving the H form to the upper stories. Light and air are secured for the auditorium and adjoining class rooms on the first floor by skylights and traps in the roofs.

On the second floor, the first one having the H form, are the biological laboratories, the library, and class rooms for general purposes and for drawing classes. In the rooms for the drawing classes both side and top light are secured: they are better than the quarters occupied by most architects. The third floor is devoted to laboratories, class and lecture rooms, and offices. On the fourth floor are class rooms, a study hall, and a library; and on the fifth, chemistry laboratories, a study hall, and lecture and class rooms. Four thousand pupils will enjoy the auditorium, which seats two thousand persons. No room above ground in this building has less than one hundred and fifty square feet of clear window space; more is provided whenever possible.

The structure is designed somewhat after the Flemish Renaissance style, with large gables and dormers on the various fronts, surmounted by high-pitched roofs. Through the first story, the building is of limestone; above this it is of brick, trimmed with terra cotta. It is considered even a finer type of architecture in its kind than the Morris High School in Bronx Borough, New York City, which was called at the time of its construction the finest existing example of school building. The building cost $603,000 exclusive of equipment. Site and structure all equipped represent an investment of more than $1,000,000.

The corner stone of the Stuyvesant High School building was laid in May of last year. This is an advanced manual training school. The H-plan here received its most severe test, yet the New York school authorities consider the structure to be superior to any other school, manual training school, or trade school in existence.

It is on East Fifteenth and Sixteenth Streets. The area of a single floor is nearly 30,000 square feet, and every corner is made cheerful and sanitary by plentiful light and air. The drawing rooms and the shops are each 26 by 50 feet. The part in which are the shops has been well isolated, thus preventing annoyance to workers in the laboratories and class and study rooms. Yet not one square foot of light-space has been sacrificed.

In the basement of the Sixteenth Street side is the stock and cutting-up room, where materials are stored and worked up into shop sizes. They can be placed on trucks and wheeled directly to the freight elevator, from which deliveries are made on every floor at convenient places. The molding room is equipped with a one-ton cupola, for melting iron. The brass furnace, sunk beneath the floor, is covered with an iron grating. The charge for the cupola is handled by a special elevator. In the basement and on the first floor, corridors extend through the building from street to street. The arrangement of the gymnasium is notable. Its running track, or gallery, is about the level of the first story floor, the direct access to it is gained from the main hallway. Its length can be judged from the size of the gymnasium itself, 93 by 100 feet. When the first pupil enters this school in 1906, the City of New York will have expended more than $1,100,000 upon it.

The most ambitious structure attempted by the New York Board of Education, however, is the Erasmus Hall High School, on

Flatbush Avenue, in Brooklyn Borough. Mr. Snyder has here achieved his greatest triumph with the H-plan. A connected group of buildings forms a quadrangle. The design is in the English Gothic. The group of buildings on the Flatbush Avenue front are dominated by a large central tower, giving entrance to the court; and this will be surrounded by further buildings devoted to the purposes of the school.

In constructing H-plan buildings, strength, or resistance to wear and tear, has been a dominant consideration. The evening and vacation schools supported by New York make the use of school buildings almost continous except upon Sundays. Hence no other buildings in New York or any other city are subjected to such a strain. The new buildings have been built with regard to this fact.

The school population of New York City increases at the annual rate of from 30,000 to 40,000, and the school authorities must provide for the morrow while providing for to-day. Now that the H-plan has solved the problem of light and air, the problem of the multitude of to-day's 650,000 school children in New York—and their fast increasing successors of the years to come—assumes paramount importance. The eighty buildings under construction will furnish seating accommodation for 160,000 pupils, and will, it is hoped, put an end to the evil of part-time classes. Yet another year will probably see plans adopted for half as many more school buildings and work begun upon them.

New York City presents a curious situation in regard to its public schools. With one hand Europe annually thrusts toward the city thousands of children who soon become candidates for the public schools. With the other she seeks to draw to herself the benefits resulting from the application of American genius to the very problem she has created in America's chief city through a flood of immigrants of school age. So impressive is the resulting lesson that almost every nation in whose economy the public school has a place, has sent a representative to New York to study school buildings and educational methods. The H-plan is, therefore, not simply a local achievement in New York City. It is a step in the public school progress of the world.

THE LABOR PARTY IN ENGLAND

THE PICTURESQUE JOHN BURNS AS A CABINET MINISTER AND HIS RADICAL PROJECTS—THE CREED AND PLANS OF THE FIFTY OR MORE LABOR MEMBERS OF PARLIAMENT—BRITISH OPINION AND SUCH SCHEMES AS FEEDING AND CLOTHING SCHOOL CHILDREN

BY

CHALMERS ROBERTS

THERE is no more noteworthy feature of the new political régime in England than the delegation of fifty Labor members of Parliament; and there is no more picturesque man of the hour than the Labor member of the Cabinet, "Honest John" Burns of Battersea.

To his credit has been justly placed much of the recent Socialistic legislation (using "Socialism" in its loosest sense) of the House of Commons, of which he has been a member for fourteen years, and more of the extreme Socialism of the London County Council in matters such as the running of municipal street railways and unprofitable penny-steamboats on the Thames and in the tremendous project for the municipalization of all electric light and power in London, a project, which will raise the expense of local taxation to an almost prohibitive figure. It was he who led the fight in the last session to bring the County Council street-car lines over the Thames bridges and run them along the broad boulevard known as the Thames Embankment, following the river for several miles on the north bank. This scheme was bitterly opposed by what are called "the classes" as a desecration of the Prince Con-

sort's great achievement and was in fact eventually defeated by the House of Lords. But on the other hand it was strongly urged by the masses as aiding them in coming to and returning from their daily work.

He will probably now make street cars over the bridges one of his earliest demands upon the new Government. He will have charge of such matters, for his Cabinet position is the Presidency of the Local Government Board. Whichever party rules, the great national legislation will concern itself with petty municipal by-laws until some great scheme is carried into effect giving local government to each of the three kingdoms and the principality, leaving the Mother of Parliaments free to "think imperially."

Upon his elevation to a Cabinet place, Mr. Burns requested of the King that he be allowed to dispense with the usual uniform worn by Cabinet Ministers at State functions. He had always foresworn the traditional top hat and frock coat in favor of a blue serge sack suit, and had even bravely worn this at the nightly sittings where many of the members in recent Tory days appeared in evening clothes. But as a Cabinet Minister he must get into the silver buckled pumps, white silk stockings, white silk knee breeches, heavily gold braided dark blue coat with the feathered cocked hat and sword of the great officer of state on formal occasions. The King is a stickler for precedent and ceremonial, and insists that the smallest button in every uniform be in its lawful place. He declined to grant Mr Burns' favor, and, Great Britain stood on tiptoe to see the President of the Local Government Board attend his first levee. *Punch* celebrated the event by a very kindly cartoon representing Mr. Burns on his return from Buckingham Palace, in the act of taking off his glittering coat and saying: "Well I suppose I can take off this coat for work as well as any other."

Then there came the amusing question of "Honest John's" salary. A year or so ago he made a widely quoted speech in which, in denouncing the extravagance of the late Government, he mentioned the official salaries paid to its members, and said vehemently that no man living was worth more than $2,500 a year. His salary now is $10,000 a year. It was not long before some unkind critic reminded him of the speech, and asked what he intended to do about the extra $7,500 a year. His answer was that he had never been "a scab," and that as he had joined the Government union, he was not going to work for less than the union scale of wages.

But for all this, Mr. Burns can no longer be counted as one of the Labor party politically. As a member of the Liberal government he must, of course, be counted as a Liberal. And the Socialist branch of the new Labor party is already denouncing him as a traitor. One of the delegates to the Socialist Congress in Berlin early in March where Mr. Keir Hardie, perhaps the leading Labor M. P., was a delegate, has been quoted as saying that "Mr. Burns is now with the enemy." So the Liberals and the Laborites will not always necessarily act together in undoing what they both hold to be the mischief of twenty years of Tory government. The Labor delegation is much like what a group of labor representatives would be in a great Democratic majority in the House of Representatives. Mr. Burns comes from the ranks of labor, was until lately supported in Parliament by Labor contributions and often proclaimed his representation of Labor. But he has recently said that he is tired to death of these class distinctions and of "working-class" this, that, and the other.

The Labor members in public interest are still the men of the period. At one of the music halls there is a biograph record of the opening of Parliament. First comes the State procession, with the King in his gilded Cinderella-like coach. When he has been followed by the blinking eye of the machine into the Victoria Tower of the House of Lords, the lens is turned toward the entrance of the House of Commons, and the audience breaks into cheers as each favorite member is seen entering the door for the new session. Aside from these recognitions, what perhaps most interests the crowd is to see the great men shaking hands with the policemen on duty at the door. And when a group of these Labor M. Ps. approach and stalk by the smiling policemen with their heads in the air, the crowd breaks into guffaws and "Ohs" and "Ahs." It is only fair to explain that the great men who are so glad to see their friends, the policemen door-keepers, are old members, whereas the Laborites have no acquaintance with them. But this little fact is lost on the multitude.

One of the group of Labor members is the

hero of a labor lawmaker's romance. Mr. J. Ward, the member for Stoke-on-Trent, represents the Navvies' Union. As Secretary of the union he has a salary of about $12 a week. He has found it impossible to support a wife and several children on this pay and attend to his Parliamentary duties. Moreover he had refused to subscribe to a stringent pledge imposed by the Labor Representation Committee, and therefore cannot claim the $1,000 a year, and the 25 per cent. of election expenses, which this committee allows to its adherents out of the general trades union funds. When this fact was made public, shortly after he had made a creditable maiden speech, the papers started a subscription in his behalf to which people of all manner of political creeds have subscribed in an amazing manner, so that Mrs. Ward and the little Wards are now secure from want, while the husband and father is in Parliament. This occurrence, as much as anything else, helped to bring forward the resolution in favor of the payment of annual salaries to members of Parliament, which passed the House by a large majority; although the Premier offered little hope that his government with its many proposed economies would proceed further with the proposal. Yet the resolution only asked for an annual salary of $1,500 for each member. The question of the payment of members, whether it encourages a class of professional politicians who vote to live, rather than for the good of the country, will provide an interesting discussion if ever it comes to the law-making stage.

Labor members are not a novelty in Parliament. There have been Labor members there since 1874 and there were ten in the last house. Mr. Will Crooks, still a member for Woolwich, where he was elected by the laborers in the Government arsenal, was a noted figure in the last Parliament. And when the King invited Mr. and Mrs. Crooks to Windsor, where "Working Will" appeared in the clothes of his class, the whole country took an interest; as it did when "Mrs. Will" headed a delegation of women from Poplar, one of the districts in the crowded East End to demand from Mr. Balfour government aid for the unemployed.

Looked at seriously, the innovation can be said to have received an honest welcome from all Britons regardless of party. *The Times* tries to be kind, even if condescending, in discussing their appearance as an appreciable factor; while it openly advises that they be treated fairly, lest they become dangerous. It does not believe that the average workingman is a Communal Socialist at all, but says that constant ignoring of many of their just claims will drive them into Socialism. That old Tory of the Tories, *The Spectator*, gave them a hearty welcome and expressed what is probably a general feeling, when it said:

> "We believe it is for the public good that working men should be able to send so many of their own class to Parliament, and we feel a sense of pride that this should have been accomplished under conditions which might at first sight seem unfavorable to Labor representation. It shows the grit and independence of the British working man, and still more his power of coöperation and his ability to discard any feeling of jealousy. Just as no other nation has yet managed to place a working man—and a working man who has not risen out of his class in the material sense—in the highest governing circle, so no other nation has yet numbered among its representatives fifty working men."

In a house with a membership of 670, fifty members do not of course count for great strength, but on the other hand this is five times as many members from the ranks of labor as sat in the last House, and the fact of the increase is alone significant. This return of a sufficient number of members to form a distinct party is attracting the attention of every country where the so-called "labor question" exists. Their eyes have long been fixed on England, where the size, the strength, and the power of the labor organizations have encouraged organizing in all industrial countries. The general impression in England is that the American labor leaders have been manipulated as tools by the politicians in a way which has never been possible in Great Britain. In no case has the Labor party proper, that is, the candidates supported by the Labor Representatives, sought affiliation with existing parties, although in some cases they accepted the proffered support of the Liberals, without committing themselves.

There is at present no sort of organization among the fifty-two labor members, no chosen leader, and no fixed programme. *The Times* has recently divided them into two classes as representing the trades unions and the Independent Labor Party.

These two classes represent twenty-three

organizations. Sixteen are miners, 7 from the Independent Labor party, 3 from the Local Committee, 3 are railroad employees, 2 engineers, 2 steel smelters, 2 shipwrights, and 1 of each of the following trades: compositors, masons, carpenters, cotton opertives, iron founders, lithographic printers, furnishing trades, boot and shoe operatives, typographical association, shop assistants, weavers, barge builders, gasworkers, navvies, sailors and firemen, and carpenters and joiners The affiliations of three of the Laborites are doubtful.

Among the trades unionist group the miners are easily in the ascendency with sixteen members. Fourteen of these are quite independent of the Labor caucus and are perhaps the best representatives of actual Imperial democracy, the free choice by the people of their best men to speak for them in the National Assembly. Unlike many of the other Labor members, the miners' members are not carpet-baggers imposed on an electorate by the party machine in the English way, so incomprehensible to most Americans. Many of the Labor members who live in London have been elected by constituencies all over the north of England. Of the other trade organizations, the railway men and the printing trades have three representatives each; the engineers, shipwrights, and steel smelters have two representatives each; and sixteen other trades have one each. Forty-one members are furnished and supported by unions. Several others have a local trades union backing but are not the official representatives of a single union nor wholly maintained by it. Next there are seven members nominated and supported by an organization called the Independent Labor Party, which, for the sake of brevity and to avoid going into a complicated story may be called the purely Socialist branch of the Labor Party. It is an offshoot of the Social Democratic Federation in which soft handed Socialists like George Bernard Shaw, Sidney Webb, and R. B. Cunninghame Graham stir up their horny handed fellow theorists. In this group is Mr. Keir Hardie, who was its only representative in the last house and who, because of his ability and his Parliamentary experience, is talked of as the leader for the whole Labor party. In that case a pronounced Socialistic line of conduct may be looked for.

The support of these various members is further divided on account of the Labor Representation Committee. This is a coalition of trades unions and Socialists formed to secure Labor members for Parliament. At the last conference in 1905 it had 165 trades unions and 76 trades councils affiliated with three large bodies of Socialists and a total claimed membership of 900,000. Each trades council (an association of local trades unions) pays about $10 per year, and other organizations such as local trades unions and socialist societies pay say $3.50 for each 1,000 members. These payments make up the ordinary funds for the support of the Committee. There is a separate fund for the support of representatives in Parliament made up of an annual contribution of 2 cents for each M. P. paid by members of every affiliated society. This sum amounted in 1905 to about $40,000. It is from this fund that the Committeee will allow each of its elected members $1,000 a year and 25 per cent. of his election expenses.

At the last election the Committee put forward fifty-one candidates of whom twenty-nine were elected. Of this number seven represent the Independent Labor Party (Socialists) and the rest various trades unions which have put their nominees in the hands of the Committee. It is clear, therefore, as *The Times* remarks, that the financial as well as the electoral strength of the movement rests upon the trades unions rather than upon the Socialists.

The parliamentary strength and composition of the Labor party are yet indeterminate. They will depend to a great extent on future events, and will probably vary with circumstances. Only twenty-nine of the members are bound together, and on some votes this may be all of their strength. On others it may be so much as sixty by the inclusion of all possible Labor members and some young Radicals who are not bound to the Government. Upon questions which immediately concern the trades unions the party front will be most united. There seems so far no definite platform, or programme. Amendments to the Workmen's Compensation Act so that compensation shall be payable from the date of an injury and, in the case of young people, that the amount of damage for an injury shall be reckoned on prospective not past earnings;

the inclusion of all workmen; the restriction of insurance companies from procuring the discharge of old or feeble workmen and a guarantee against the employer's bankruptcy —all these have been asked for. As *The Times* sharply remarks, in discussing these proposals, it is highly problematical how these charges will commend themselves to the numerous employers who grace the Liberal benches.

Another matter of vital interest to trades unions occupying a prominent place on the Labor party's programme, is the necessity for some legal definition of the position of trades unions since the Taff Vale decision. This declared that the unions as corporations are liable for damages inflicted by strikes which they have ordered. The unions maintain that their funds are benevolent only, and cannot be sequestered for damages.

Other matters discussed by members of the new party are measures for dealing with the unemployed, and, if the next winter brings forth an army of distress such as preyed upon London during that just passed the President of the Local Government Board, the Rt. Hon. John Burns will not have an enviable time at the hands of his former associates. Another Socialistic measure, the feeding of children in the public schools has already been discussed in the present Parliament without a decision. Some of the more advanced Laborites demand not only food but clothes for the public school children. There are many other measures in the background, like old age pensions and very large measures of electoral reform and remission of taxation, which so far have never come nearer to actualities than inclusion in some Labor programmes.

The Labor party in England is now a living growth, full of strength and vital promise. But the fruits of its labors are not even in the bud.

A NEW ISTHMIAN RAILROAD

MEXICO COMPLETING THE TEHUANTEPEC ROUTE THAT WILL BRING NEW YORK 1200 MILES BY SEA NEARER SAN FRANCISCO THAN THE PANAMA ROUTE—THE STORY OF ITS BUILDING—A LINK IN A GREAT INTERNATIONAL SYSTEM

BY

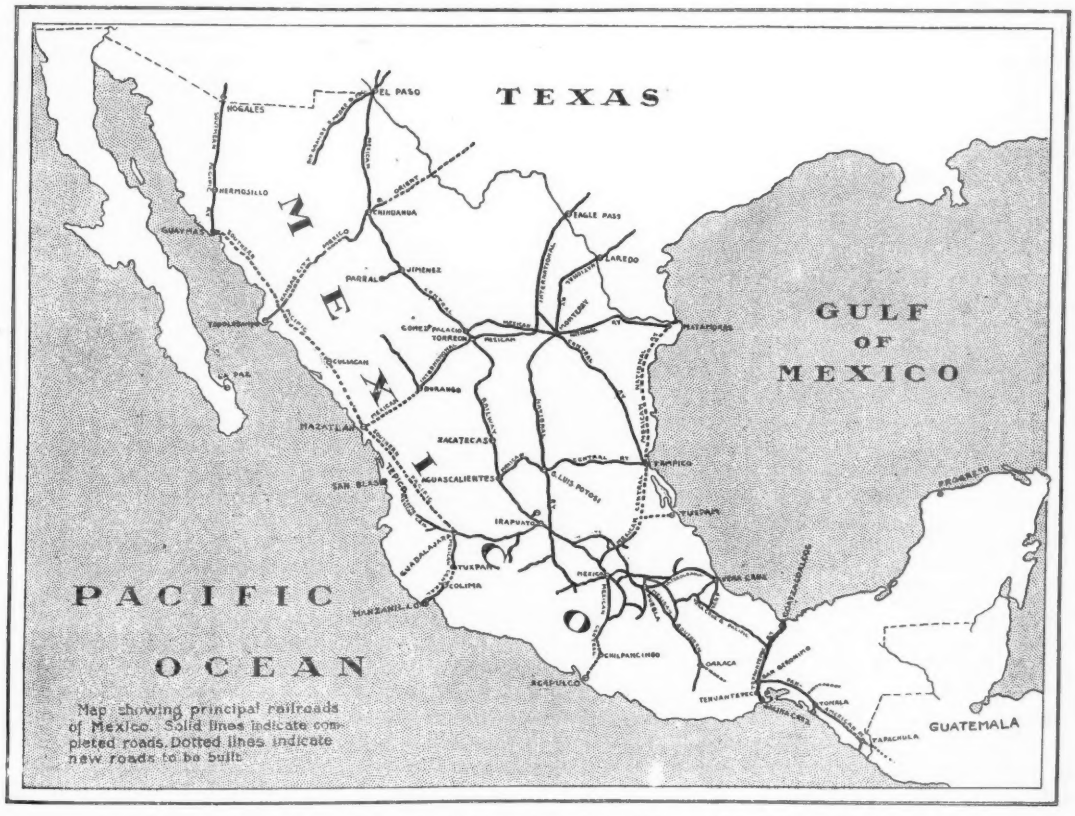
EDWARD M. CONLEY

MEXICO is about to take a twelve-hundred-mile "kink" out of the line of international commerce which has been using the Panama route. At the same time it will give the American transcontinental railroads a tremendous shock by opening a new short route from the Atlantic to the Pacific which they cannot control. By the end of the year the new railroad across the Isthmus of Tehuantepec is to be opened to interoceanic traffic on a large scale. The railroad has been completed for some time and is in operation for local traffic. It is only awaiting the completion of its terminal ports to begin handling ocean freight. These ports, though they will not be fully completed in less than two or three years, will soon be sufficiently advanced to be used by vessels of any size.

The railroad, being 600 miles north of the Panama railroad, is that distance nearer the natural line of the world's east and west commerce. It will bring New York and North Atlantic ports 1200 miles, and New Orleans and Gulf ports 1400 miles, nearer to San Francisco, Japan and China. The sailing time from New York to Coatzacoalcos, the Atlantic terminal port, will be six or seven days, two days less than to Colon, the Atlantic port of the Panama railroad. Cargo from a vessel landing at Coatzacoalcos, say of 10,000 tons, can be aboard another vessel in the harbor of Salina Cruz, in four or five days. In an emergency the trans-shipment could be accomplished in thirty-six hours. The same freight could not be transferred across the Isthmus of Panama in less than three weeks, possibly longer. At Salina Cruz,

the Pacific port, the vessel is two days nearer San Francisco than it would be at Panama. This serves to illustrate what the new route means in saving time.

But perhaps the more important fact is that the Tehuantepec railroad is able to handle ocean freight at all. Can the Panama Railroad? Under its old management American transcontinental railroads controlled it and rendered it valueless as a competing line. That is now changed, but without radical



THE RAILROADS OF MEXICO, SHOWING THE NEW TEHUANTEPEC TRANS-ISTHMIAN LINE

improvements the Panama railroad could not possibly handle all the traffic that would naturally go to it. During the construction of the Canal the handling of general freight across the Isthmus of Panama will be limited and uncertain at best. The Tehuantepec railroad has been completed just in time to relieve the situation. It will be able at all times to handle all the business that comes to it without delay. It will be operated independently and upon a strictly business basis by a man who knows how to run it. There will be no discrimination. All shippers will be treated exactly alike. The rate question was settled in Mexico long ago. The Mexican government fixes all railroad rates and, strange as it may seem to American shippers, the law is obeyed.

The building of such a railroad was unsuccessfully attempted a great many times during the past half-century, mostly by Americans. The Tehuantepec route has been much discussed in the United States in connection with the Panama and Nicaragua routes. About the middle of the last century it was proposed that the United States build a railroad across the Isthmus of Tehuantepec for international use, assuming control over and guaranteeing the neutrality of a strip of land on either side of it. Mexico was willing, but two treaties failed to obtain the approval of the American Senate and the matter was dropped. In the 70's a commission was appointed by our Government to report upon the feasibility of an interoceanic canal across

the Isthmus, and the Tehuantepec route had strong support in Congress. Some time prior to that an attempt was made to interest the Government in a scheme to build a "ship-railroad" across the Isthmus, which would carry vessels bodily on huge platforms resting upon parallel tracks across the narrow neck of land. More than a score of attempts were made by American companies and individuals to build a railroad as a private enterprise, under concessions from the Mexican government.

The road has finally been built by Sir Weetman Pearson, the English contractor, at the expense of the Mexican government. It is to be operated by the contractor in partnership with the Government for a long term of years. Its total cost, including the harbor and port improvements at its terminals, which constitute the chief items, will be nearly $25,000,000.

The road is 190 miles long, following the only break in the great mountain range that extends through North, Central, and South America, and the route is, therefore, comparatively level. The chief difficulty in building a railroad in the tropics is to construct it so that it will withstand the torrential rains. The Tehuantepec railroad is most substantially built, with rock-ballasted roadbed, heavy creosoted ties, heavy rails, and heavy steel bridges, with unusually heavy masonry supports. Yet even with these precautions some sections of the track have been washed out a great many times. Experience and experiment have finally enabled the builders to overcome this difficulty sufficiently so that no interruption of traffic is likely to occur after the road begins handling trans-isthmian freight. The railroad is amply equipped with first-class rolling stock to handle a great volume of traffic without delay.

The building of a harbor at Salina Cruz the Pacific terminal was a difficult and costly undertaking. There was only an open roadstead and it was necessary to make an artificial double harbor. The outer harbor is being formed by two breakwaters thrown out like giant arms into the sea and enclosing, save for the entrance, a large area of water. The inner harbor will be a great excavated basin around which will be built the custom house, government stores, warehouses, and terminal tracks. At one corner of the basin will be a large dry-dock. Every modern facility will be provided for the handling of freight from vessel to cars and vice versa.

The river at Coatzacoalcos, the Gulf terminal, forms a splendid inner harbor of unlimited capacity. It was necessary to remove a bar at its entrance; so two converging jetties are being built seaward from the mouth of the river, so as to scour out a channel by the action of the river current. The jetties are nearly a mile long. Docks and warehouses, machinery and appliances for handling freight, and railroad terminal facilities are being provided on a large scale.

The railroad will not have to wait for business when it is ready to handle it. Contracts have already been made with several large shippers to carry their freight across the Isthmus at the earliest possible date. From the day the terminal ports are ready to receive vessels, the road will handle more traffic than is now being handled by the Panama railroad. Arrangements have been made with a number of steamship lines for regular service between Pacific ports and Salina Cruz, and between Coatzacoalcos and North Atlantic ports.

The recently completed Vera Cruz and Pacific railroad, now owned by the Mexican government, connects the Tehuantepec railroad with the City of Mexico and with Vera Cruz, the country's chief seaport. From San Geronimo, on the Tehuantepec road, the Pan-American railroad is being built southward along the Pacific coast toward the Guatemalan border. About 150 miles of it are now in operation and it is hoped to connect it with the railway system of Guatemala within a year. The Pan-American will be a long link in connecting the railroads of North and South America.

Railroads of as great importance to Mexico, and incidentally to us, as the Tehuantepec road are being built in other parts of Mexico. Two lines, the Mexican Central and the Kansas City, Mexico, and Orient, are pushing through the rugged mountains of western Mexico to the Pacific coast. Other lines to western ports are projected. This section of Mexico, which is exceedingly rich in natural resources, has hitherto been isolated. Transportation facilities will bring about its speedy development. They will also mark the beginning of a new epoch in the commerce of the Pacific. Western and Central Mexico and the Middle West of the United States will send their products by these new railroads through

Mexican Pacific coast ports to the Orient and other markets of the world. Mexico is already a customer of the Far East to a limited extent and with rail communication between the Pacific coast and the interior of the country that trade will grow. The coastwise trade of the Pacific side of the Americas will be increased considerably. In effect, over 2,000 miles of new coast line, with half a dozen important ports, are about to be added to the commercial map of the Pacific.

Sixty-seven miles of track will connect the Guadalajara branch of the Mexican Central Railroad with the Pacific coast port of Manzanillo. The road is completed as far as Tuxpan and a line extends inland from Manzanillo to Colima. The descent from Tuxpan to Colima is through exceedingly rough mountains and the road between these two points will be a succession of tunnels, bridges, and cuts through solid rock. It is expected that it will be finished in less than two years. The Mexican government is making extensive harbor and port improvements at Manzanillo in anticipation of its completion. Manzanillo is due west of the city of Mexico. It is 600 miles distant by rail and will be the natural Pacific port for the capital. It is about 200 miles distant from Guadalajara, the second largest city in the republic, and will give that city an outlet which will be of inestimable advantage to it. The Guadalajara-Manzanillo branch of the Mexican Central and the Tampico branch of the same road will make an almost direct transcontinental line, less than 1,000 miles in length, from Tampico to Manzanillo. This road has a branch running southward from the City of Mexico to the Balsas river, which it expects to complete to the Pacific port of Acapulco as soon as it finishes its Manzanillo extension.

The Kansas City, Mexico and Orient railroad is building a direct line from Kansas City to Topolobampo, just at the end of the Bay of Lower California. Work is progressing simultaneously on different sections of this line. Some parts of it are already in operation. It will be finished very soon after the completion of the Mexican Central's line to Manzanillo. This road will be of the greatest advantage to our Middle West. It will give Kansas City an outlet to the Pacific nearly 700 miles shorter than the present route to San Francisco. That is the distance from Kansas City to Topolobampo by this new line is only a little more than half the distance by rail to San Francisco. But more important than this is the fact that it will give Kansas City and all the territory tributary to it a competing line that will compete. It will remove the Middle West from the power of American transcontinental lines and enable it to build up a trade with the Orient and with the west coast of North and South America. One of the commissions appointed by the American Government to report upon an isthmian canal gave as its opinion that just such a railroad as this would be of more value to the United States than an interoceanic canal.

The Southern Pacific railroad, which has a branch from its main line through Nogales to Guaymas, on the Bay of Lower California, has recently obtained a concession from the Mexican Government to extend its line southward along the coast, through the States of Sonora and Sinaloa, to the port of Mazatlan and thence to Guadalajara. The Mexican International, which is now one of the national lines of Mexico, controlled by the Government, holds a concession for a line from Durango to Mazatlan. And there are other lines making in all an addition of 2,000 miles to the Mexican system of communication.

A glance at the accompanying map will show that all these 2000 miles of new railroads will not only open up new sections of country to development and new avenues for commerce; they will join Mexico's 10,000 miles of separate railways into a system. They will not only connect the capital of the country with every section it; they will give each important city of the republic fairly direct connection with every other important city. They will perform the same service for border points, effecting a great saving of time and distance between American and Mexican cities. Within the next five years Mexico will have a network of railroads, that, with the same amount of mileage, could hardly be improved upon. They will have cost in the neighborhood of $1,000,000,000 of which nearly $400,000,000 will be American capital. American interests will own more than half of them; nearly $400,000,000 will have been spent by the Mexican Government, in subventions, purchase price and cost of construction; and nearly $200,000,000 of native and other capital than American will have been invested.

NATHANIEL SOUTHGATE SHALER

BY

LANGDON WARNER

THERE recently died in Cambridge, Massachusetts, much to the saddening of Harvard University and of an uncommonly wide circle, a man whose personality will always stand out strong in the lives of those that had the good fortune to know him—an unforgettable, many-sided, inspiring man, Professor Nathaniel Southgate Shaler, Dean of the Lawrence Scientific School of Harvard University.

His father was a Harvard man of the class of 1827 who settled, as a physician, first in Jamaica, whither the family had come from England; but he soon afterward went to Kentucky where his son was born in 1841, on a plantation outside the town of Newport. Here he lived until he was eighteen, attending for a little while the nearby school, but for the most part learning from his old tutor, the German scientist, Escher. He himself told how, when young, he was much alone, roaming the countryside with a dog and a musket. Often a little negro of his own age would go with him to carry the powder-flask and bullet-bag. With Herr Escher he read every book that his father's library afforded, German and English. He studied the classics and discussed philosophy with his tutor, who helped him to classify the collections of rocks, fossils, birds' eggs, and flora, which he brought home from the tramps and riding trips that took him over four counties and sometimes across the state border.

When he was eighteen, in the year 1859, he was sent to Harvard where he enrolled in the Lawrence Scientific School, and studied biology and other natural sciences under Professor Agassiz. With his degree in 1862, he hurried to Kentucky before Commencement Day to take a captain's commission in a light battery, the Fifth Kentucky of the Union Army. This soon came to be known as "Shaler's Battery" and gave a good account of itself through two years of active service. Some of us, his pupils, would give much to have seen the young Captain heading his battery against Bragg, or helping to cut off Morgan when he tried to cross over into Ohio. We know that he was a good officer and no slack disciplinarian, but it is safe to say that some of his manœuvres were not to be found in the tactical treatises. On one occasion at least, he chose to regard his guns as a troop of horse, and used them as such against a dumbfounded enemy.

In 1864 Captain Shaler's health broke down from repeated attacks of camp-fever and from exposure. His usefulness in the army had come to an end. He resigned his commission and went back to Cambridge as instructor in Paleontology. Five years later when he was twenty-eight years old he was appointed a full professor.

As we of his later classes knew the Dean, he was tall and lank, with white hair standing stiffly erect from his high forehead. As the chapel bell started in the morning, his door would burst open and he would swing down the path, across a forbidden border of grass, and into the side door of the chapel. Here he sat erect under the preacher's right hand till the short service was over. At the benediction, he about-faced, turned into the main aisle and marched, with his black felt hat grasped to his breast, military fashion, out into the sun.

Man was to him the most delightful of all studies. Perhaps it should be said that he was a psychologist before he was a geologist. All science was written for him in terms of humanity, and no theory was too abstract, no law of nature too formal for him to make it instantly human. He had the great quality of being as old or as young as his companions, whether they were children, or boys, or men.

When Darwin first propounded the theory of evolution, he eagerly grasped the truth, and championed it even against the teachings of his master Agassiz, whom he greatly revered. A young man of the new school of scientists sought to trick him into an inconsistency, and pointed out that evolution must unsettle the beliefs of a man who accepted Christianity. Professor Shaler turned on him and said:

"I believe in Christianity, and I believe in this evolution. Touching the Almighty, we cannot find Him out."

A volume could be written about his life in Cambridge, his work with the students and his service to the University. While that was of course the side of him that we knew best, it was typical of the man that he himself should greatly value his work in other parts of the country. His rambling travels took him over our continent many times, and his habit of dropping off a train a thousand miles from where he was expected to be, kept his casually made friendships green all over the land. He was fond of saying that the Nathaniel Shaler of the West and the North, meant a very different man from the fellow of that name in Cambridge. Out there they knew him as the man who pointed out the place to bridge the canyon, who dug the artesian wells, who scratched with his heel on the ground and said to them out of the book of Job:

"Surely there is a vein for the silver, and a place for gold where they fine it."

Best of all he loved the problems of the pioneer in desert countries. He fetched water from the far off hills and led it over the parched land till there were orchards, and crops, and fat herds. How he would laugh as he told of the exploits! A high shout of glee, and a delighted wave of his staff.

His open manner and his large comprehending air were understood in the West—and our professor was the sworn friend of many a rancher and miner, and many an engine-driver in whose rocking cab he had chatted by the hour as the train took him westward and he swapped stories with the stoker. Never was an aristocrat more perfect in his frank meeting of man to man. He was easy in the technical slang of every craft, yet his clean Anglo Saxon was so pointed and so edged that it bit deep into any subject he attacked. Or, if he chose, his diction was elaborated and decorated to a rare delicacy of fancy. It was a fine sight to watch him up the road waving his stick as he emphasized an argument with some friend. He literally talked miles with his companions. One boy said—"He swung the English language round his head and never felt the weight."

When some of his associates in the Faculty—literary men—taunted him with being a "mere scientist" who should not presume to discuss matters outside of his sphere, he declared that his sphere was the larger and embraced theirs—that a man who could not appreciate the graces of life was by just so much the less a scientist; and he strode off to prove it. Within a short time there appeared a dramatic poem, five separate volumes of blank verse under a title which in its simplicity was no small thing to conceive—"Elizabeth of England."

The range of subjects covered by his printed works is the range of the interests of a whole faculty of learned and alert men. A treatise on "The Foot of the Horse," an Elizabethan drama in blank verse, "The Individual—A study of the Individual and the Government," and a history of Kentucky, are four works which show his scope. No one of the four could be overlooked by a student examining the subject. They are sober efforts into each of which he threw the whole of himself, imagination, enthusiasm, and learning.

So eager and comprehensive a mind often laid itself open to criticism from petty methodists who judged ultimate results by the paths they were reached by. They could not see how much nearer the truth he was when he soared in his high realm of fancy, than were they, creeping below. His eye was focussed for huge masses and colossal shapes. I have no doubt that his concept of a mountain, or of the ocean floor, was nearer to the ultimate truth than the brain of a more exact scientific man could conceive. He dealt with time by epochs. Space was not for him sliced up into miles and acres.

The dramatic points of his subjects were always brought out in his lectures with great relish. To have heard him describe the movements of the ice-cap over our continent, you would have thought he had been there, observing from a mountain peak; and, when he wound up with the fact that he himself owned "a patch of glebe on the very moraine piled by the edge of that creeping ice-sheet" you felt that the Creator had probably parceled it out to him as his rightful share in the great land improvement.

He told us how it was possible to wash gold from the New England brooks in their time of spate; and how he himself had once "found color" as the miners say, from some sand dipped from the bed of Beaver Brook and panned in his watch-crystal. How typical

that was of him! It was his very habit of mind to take a bit of the stuff of his everyday surroundings and by panning it in the watch crystal of his fancy, show the glint of precious grains.

The Cambridge hospital, the college infirmary and even the Police Court, were subject to frequent and sudden visits from him. If one of his boys was in trouble for breaking lamps or mocking at the majesty of the law, Dean Shaler would very respectfully ask leave from the judge to speak, and then proceed to sum up the case, deliver judgment and discharge the prisoner, all by virtue of the authority in him invested, as father and friend to every one present, the judge and the police sergeant included.

In the hospital he would pull up beside a bed, feel a pulse, diagnose the case, tell the boy that he heard good reports of his work, and then fall into dispute with the doctor on the effects of anti-toxin on diphtheria.

As Dean of the Scientific School no Freshman chafed more at the rules than he. He wanted to put up the office shutters occasionally, that he might be able to go and have a look at the river terraces of the Ohio or drop down to Washington to talk politics.

A fine day in the spring of the year would set him literally skipping for joy, the wine of life ran such a pace through his veins. At such times he was moved to give us his wildest and most improbable stories.

There can be no doubt that these very stories, and the generous imagination of the man who told them, attracted more young men into the natural sciences than any other one influence at Cambridge. The astounding conclusions and the masterly summing up of evidence never seemed to discourage the careful consideration of minutiæ necessary to the training and the work of the scientist. His pupils are not men who jump at conclusions nor men untrustworthy for careful observation, but are rather notably of the other sort.

His contribution to his time will come to be reckoned in numbers of men rather than in numbers of facts, though he added appreciably to the sum of our knowledge. He put life into men, and sent them out into service for the college and the community where they may be seen to-day

These sons of Shaler are throwing bridges where past generations laboriously trod fords. They are bringing water to lands which have gone thirsty since the last glacial epoch. They are digging coal out from the hills, and washing gold from the sands of the watercourses, and they are cutting canals from ocean to ocean.

When the home mail-bags are brought to these pioneers, and they read of the death in Cambridge, each will quit work for a moment and say to the men under him—

"There was a Man."

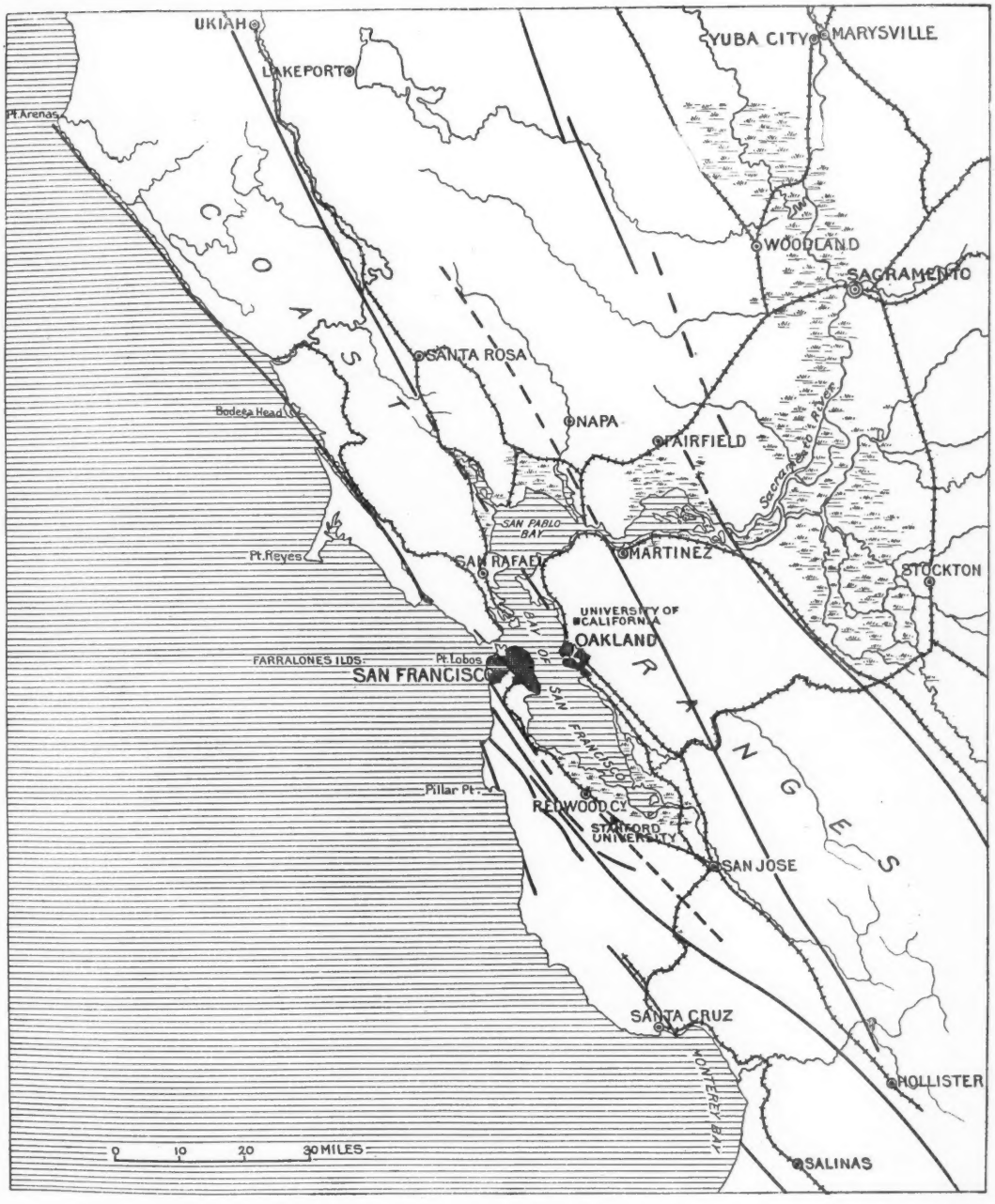
THE CAUSE OF THE GREAT EARTHQUAKE

THE RECURRENT CRACKINGS AND SLIPPINGS OF THE EARTH'S CRUST IN CALIFORNIA—NO VOLCANIC ACTION FOR A MILLION YEARS—THE LINES ALONG WHICH THE EARTHQUAKES OCCUR—A STORY OF THE STUPENDOUS PROCESSES BY WHICH MOUNTAINS ARE BUILT

BY

ARTHUR C. SPENCER and RALPH ARNOLD

A CALAMITY like that attending the recent earthquake in California opens many questions concerning the causes of such paroxysms of the earth. There are many gaps in our knowledge, and differences of opinion among authorities but the general theory is made more complete through new data gleaned from study, after each great shock. Many expert observers have already begun collecting evidence bearing on the San Francisco earthquake. Several features of it, however, harmonize so closely



A MAP OF SAN FRANCISCO AND VICINITY SHOWING THE PRINCIPAL LINES OF "FAULTING" OR BREAKING OF THE EARTH'S STRATA. IT IS THE SLIPPING OF THE STRATA AT THESE BREAKS THAT CAUSES THE CALIFORNIA EARTHQUAKES

with records of past times, to be read from the topography and earth architecture of California, that certain of the main conclusions of the investigations may be forecast.

The Pacific Coast region of the United States lies within a great zone of closely related mountains extending from Cape Horn 10,000 miles northwestward to Alaska. Practically all of the present conformation of California has been produced in compara-

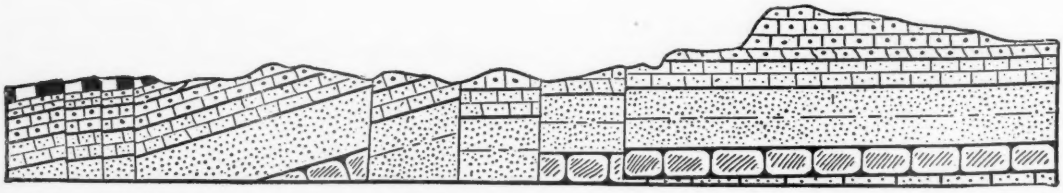
DIAGRAM OF THE GREAT MOUNTAIN BLOCKS OF CALIFORNIA CREATED BY "FAULT" DISPLACEMEN OF THE EARTH'S CRUST

tively recent geologic time, mainly since the beginning of the so-called Tertiary age immediately preceding the Quarternary age in which we live. The mountains have been formed by the uplifting of great blocks of the earth's crust. The intervening valleys follow either the down-tilted sides of the mountain blocks, or down-thrown areas between them. The displacements that result in the throwing up of mountain blocks and the dropping of valleys between are called by geologists "faults" and the cracks where the uplifted and dropped blocks touch are called fault fissures. In California the fault blocks are always long and narrow and they run mainly northwest and southeast, except in the belt of east and west cross ranges, about fifty miles wide, which reaches the Pacific Ocean at Point Concepcion. The master block of the Sierra Nevada range has been raised by complex faulting in a narrow zone along its eastern edge, and toward the western side there seems to be a general tilting which continues not only to the base of the mountains, but also beneath the Great Valley of California occupied by the Sacramento and San Joaquin rivers. From the western edge of this valley rises the great block carrying the Coast Ranges. This second master block includes not only the Coast Ranges, but a belt of submarine mountains extending to the border of the continental shelf overlooking the Pacific deeps. The bank where the continent rises out of the ocean depths, revealed by soundings, may be assumed to have been produced by fault displacements like those that created the Sierra and the Coast range, and possibly even more profound.

The Coast Ranges form a belt from fifty to eighty miles wide between the Great Valley and the ocean, and almost all the destructive earthquakes occurring since American occupation have been confined to this belt. As studies of these mountains and of the intervening valleys are extended, it becomes more and more apparent that almost all the prominent features have been produced primarily by fault displacements, and only modified by erosion. There are evidences of faults everywhere throughout the Coast Range belt; but there is a narrow zone of dominating disturbance traceable from the Gulf of California to the Pacific Ocean near Point Arena.

From the Gulf this zone runs north and about sixty degrees west, past San Bernardino and northeast of the San Gabriel Range to the headwaters of the San Joaquin River. Here it takes a new direction, about north forty degrees west, and with almost no deviation, follows the eastern border of the Carisa Plain to Polonio Pass, thence the western side of San Benito Valley to the flank of the Santa Cruz Mountains opposite San José, passing six miles west of Stanford University, and reaching the coast near Mussel Rock toward the northern end of the San Francisco peninsula. Still farther to the north on the same course it strikes along the coast to Point Arena.

Records of recurring movements along this line are preserved here and there throughout its course. Not only are the mountain masses and deep valleys aligned with or



A CROSS SECTION OF A "FAULTED" COUNTRY SHOWING HOW THE STRATA ARE BROKEN BY FAULTS AND TILTED AT DIFFERENT ANGLES IN CERTAIN OF THE 'BLOCKS"

parallel to it, but minor ridges, local depressions and even rivulets give mute testimony to the forces which have been and still are intermittently active along it.

The San Francisco peninsula has been particularly affected by ancient movements, and here displacements have been distributed along several fissures, the positions of which are marked by narrow fault valleys, one of which contains the Lakes San Andreas and Crystal Springs belonging to San Francisco's water system. To the northwest of these lakes a series of sinks reveals the existence of a cleft, the opening of which occurred many years ago, in all probability before the Spanish occupation. Similar depressions in the Cholame Valley near Parkfield mark the "volcanic crack" opened during the quake of 1868. It is said that vaqueros from Rancho Cholame, attempting to sound this chasm, were unable to find its bottom with the combined lengths of several sixty foot lariats. Judging from the present appearance of the sinks the width of the fissure at the surface must have been eight or ten feet. Forty miles to the southeast a steep bank, in places from six to ten feet high, rises from the Carisa Plain along a corresponding break.

A belt of extensive faulting not yet fully studied enters the Russian River Valley from the northwest and extends on past Santa Rosa into San Pablo Bay. This long depression has been shown to be a down-thrown block, and there is every reason for ascribing a like origin to Napa Valley on the east, the continuous depression occupied by San Francisco Bay and the Santa Clara-San Benito Valley, and to Salinas Valley south of the principal fault zone which has been described. Along these valleys the greatest destructive effect of the recent earthquake was exhibited. To the north, Napa and the towns along Russian River were greatly shaken, though Sacramento in the Great Valley was relatively uninjured. To the south of the metropolis, Stanford University, San José, Hollister, Santa Cruz and Salinas suffered severely. Early dispatches reported that north of Salinas and a few miles inland from the Bay of Monterey, a line of mud geysers appeared and a crack in the ground was repeatedly opened and closed. Santa Cruz, which lies on the north side of Monterey Bay in line with the axis of Salinas Valley, is situated near a zone of complicated faulting which follows the easterly flank of Ben Lomond Mountain toward the northwest.

All the points which have been made about the geologic structure of the Coast Ranges indicate slipping of the earth's rock-strata along the faults as the origin for California's long list of earthquakes. The facts eliminate almost conclusively the possibility of any connection with volcanic activity, since the very latest volcanism in the California Coast Ranges was manifested in later Miocene time, certainly not less than a million years ago.

In the earthquake of April 18th, the region of greatest destruction was a belt nowhere exceeding fifty, and for the most part only twenty-five miles wide, but more than 250 miles long. This strip of territory, lying entirely within and running parallel with the Coast Ranges, is paralleled by the zones of fault displacement which have been described. The reported opening of a chasm near the Dolores Mission in San Francisco leads to the expectation that this phenomenon will be found to have occurred along a known geologic fault which crosses Valencia Street near 18th, and extends to the northwest toward the Presidio.

The facts, then, support the conclusions that the recent earthquake originated in a sudden adjustment, caused by accumulated stresses within the great Coast Range block of the earth's outer crust; that the initial concussion will be found to have been distributed lineally, rather than to have been situated at a definite point; and, finally, that the lines of greatest disturbance will be proved coincident with some of the main fault fissures which traverse the Coast Range belt. The rapidly decreasing intensity of shocks toward the east is what might be expected from the known existence of many northwest and southeast fault zones within the Coast Ranges, for vibratory waves of all sorts are propagated in the same manner through all kinds of media, and earth waves caused by subterranean concussions conform to the same laws of reflection and refraction as waves of sound and light, and are equally likely to be dissipated in traversing non-homogeneous or discontinuous materials. Discontinuity is certainly a feature of the earth's crust in California, and to this fact must be attributed the limited east and west intensity of the recent earthquake.

THE NEW SCIENCE OF BUSINESS

MAKING AN OFFICE EFFICIENT

BY

EDWARD D. PAGE

I REMEMBER once when traveling in Italy, I had my trunk sent "grande-vitesse" from Geneva to Venice. I waited in Venice for it nearly a week before it came, after which I went up to the custom-house to settle the duties and freight. An old clerk, a very fine-looking old gentleman, was there to attend to my case. I found that there was a duty of one lire 50 centesimi to be paid—about 30 cents. The clerk took out three large sheets of partly printed paper each of them larger than any foolscap we see in this country—very fine paper, such as we print bonds on—evidently made of linen. He filled out one of the sheets, and then made a first copy, and then a second. As each page was finished he emptied a box of sand on it to absorb the ink, and catching it in the fold of the sheet, poured the sand back into the box. I couldn't imagine what it was all about. It took me more than an hour to pay my thirty cents and get my piece of baggage with one of the three copies of this very formidable paper, which proved to be a declaration of value. The experience made me proud of our office methods in this country, but I thought of what they were before we introduced type-writing and duplicating systems, and I wondered whether after all we might not have been after a fashion, in the same boat, if we had not undertaken to clean house eight years ago.

In the Dry Goods Commission business the merchandise made by our mills is consigned to us for sale on invoice forms. Before reforming our office, our system was cumbersome from this point on. We now have loose-leaf books throughout the office, and the invoices are copied into these books only when the goods they represent go into stock. The larger part of our business is handling merchandise that has been sold prior to its shipment from the mill, which does not go into stock. With such sales the mill invoice itself is used as the original document in making the entries for our sales-book, saving much time formerly wasted in copying every invoice whether sold or not sold, into our bound invoice books.

In making a sale the salesman writes its details on a brown paper ticket, pads of which are distributed at convenient places about the salesroom. This ticket after being time-stamped, then goes to the office. Formerly that sales ticket used to be handled by many persons; the invoice clerk, the bill clerk, the shipping clerk, the sample department, the order-book clerk, the man who wrote the copy-of-order which we send to our customer, and lastly the person who made out the shipping order to the mill, and each clerk initialed the ticket when his function had been performed. We found that by a simple system of duplicating on registering blanks we could knock out most of that work. Now, as soon as a sale is made, the sales ticket goes to a typewriter who makes as many carbon duplicates of it as are necessary on a variety of blanks, so arranged that they all register one under another. Though on each copy the printing is different, the written part is the same on all. One copy goes to the buyer as a copy of order, another to the mill as a shipping order, and a third to the Sample-Card Department, where the samples are picked out and the copy filed as a voucher that the work has been done. A fourth copy goes back to the department where the sale originated, so that its progress can be watched through the various agencies by which it is successively handled, and for ready reference in case of dispute about any of its conditions; and a fifth goes to the order clerk, who enters the sale in the order-book.

Again, our old office practice in charging goods was to have the bill, the duplicate bill, the salesbook and the sheet for our Boston house written by four different men to whom a fifth called off the terms, yardage, etc. I very speedily found out that in spite of the

fact that each was supposed to check the extensions of the rest there were many errors, and my only hypothesis was that they copied from one another. Moreover our office was full of noise—there were three sets of men calling off for the different three sales departments, and there were twelve men writing down. I suggested to the office manager that he would have a quieter office if he abolished this calling-off, but he said, "It would be impossible to do this business unless we call off—how are you going to write your four copies?" I said, "Carbon!" "Oh!" he said, "impossible!" "Impossible?" I said—"We'll try it."

We got up a form of a bill with a duplicate underneath it, and under that a triplicate for our office use, and had them printed so that they registered exactly, being attached together by the printer. The bill clerk now takes a set of these bills, sticks carbons into them, writes down the preliminary details, making no additions or other computations. He passes the set on to a girl who sits at a desk with a comptometer and an arithmometer. She adds the yards on the comptometer and extends the bills on the arithmometer, and does the work of six men with great ease.

The original and duplicate bills intended for the customer, are passed on to the shipping clerk, who gets them checked by the credit department, which gives him his warrant for the shipment of the goods. The triplicate gets to our ledger clerks, but it goes first to an operator, who, on a Fisher machine, writes out in duplicate our sales-book, carbons under it our report to the Boston house, and under that our account-sales for our manufacturer, all of which must therefore correspond exactly. It has been unfortunately the custom with some houses to render a sale account to the manufacturer which did not agree with the bill sent to the purchaser. Under our system that is impossible.

The next difficulty that arose was with the shipping department. We have had the same shipping clerk for more than twenty years. He is familiar with all of our customers, indeed, I think he knows most of them personally, and he used to carry their shipping directions in his head. Every now and then he would route his goods wrong, and there would be a dispute. No records were ever kept of shipping directions given by customers, but his memory which was excellent, was always relied upon in case of trouble. But we cannot afford to have continual disputes with our customers, even over trivial matters, and after a great deal of very hard work I got him to use a vertical file for shipping directions as they were sent in, so that we should be able to refer to the exact letter in which shipping directions were sent to us. He can thus have them before his department in such a way that in case he were taken ill or went on vacation, a subordinate could perhaps find the right routing for merchandise that was coming through. A shipping ticket, or order on our storehouse for the merchandise, had to be made out, a memorandum to be delivered with the goods to the buyer, and a receipt to be signed by his receiving clerk! three separate papers. I had seen devices such as are used in department stores for recording purchases which enable a clerk to hand you a bill, and shoot another along to the office with your money to get change, and I found that we could get these autographic registers, especially adapted for making out our three papers, all with one writing. We handle our bills of lading in the same way, and the original, the duplicate to be taken by the freight lines, and a triplicate for our storehouse order are made in one process.

We introduced in our order books a loose leaf system, and reduced all our rulings some twenty in all, to three forms, all exactly the same size, so that in each order book we can have different blanks for different classes of goods, which is a great convenience.

The next function of the office is to handle ledger accounts and money. I found the deepest conservatism among the bookkeepers. The men who handled the ledgers were the hardest ones to deal with that I ever saw. A loose leaf ledger was the first thing I began with. It took me three years really to get the loose leaf ledger system well established in our cashier's department. I didn't want to offend the cashier, because he had been with us a long time, and he had handled from seven to ten millions of money every year and we had never lost a penny—but he was quite certain that there were great dangers connected with the loose leaf ledgers which we should never be able to overcome. In fact, he thought that without the old-fashioned hard-backed ledger he really would not be safe—he was afraid somebody would

run off with the leaves. And besides, it was a modern thing, and didn't appeal to him. However, we got it in. We have four of them now, and even he would not part with them for a great deal.

Formerly our large sales-book, a book about thirty inches broad, was brought down and set alongside of the ledger, which is a book about twenty inches wide for posting. The ledger clerk would take an item from the sales-book on the left, carry it in his mind while his body travelled maybe forty or fifty inches, and finally write it in its proper place, on the ledger page. The sales-book being arranged with reference to rendering accounts current to the mills, its entries are consecutive as to time and not in alphabetical sequence as to customers, and therefore the ledger items appertaining to each of the four alphabetical divisions of our ledgers had to be picked out separately, from the salesbook. The bookkeeper was obliged to search for his ledger page, backward and forward, for nearly every entry. It may be easily seen that there was a large chance for error in posting an item while it was travelling forty inches and a great deal of time lost while a page was being found, but as we have it now, the ledger is in front of the bookkeeper and the triplicate of each entry, assorted alphabetically just above it in the middle: he turns his bill over after posting it, and turns forward consecutively one, two, or three pages to his next account, the entries of course being in the same order as the ledger pages. Once a month the ledgers are proved and the balances entered on a balance ledger. We use card ledgers for some of our minor accounts, but they are not adapted to our business on the whole.

One of the duties of the office is to give statistics and information. In the first place, it has to present to every one of the partners a daily report, which must be on his desk at 9:30 A. M. It shows the time the store opened and closed the day before, the number of lunches served—for lunch is provided for the office force—the number of entries and credits made, the amount of mail sent out, the errors discovered, the time of opening and closing the storehouse, the number of packages into and out of the store and storehouse, the work behind, if any, the absentees, the amount of sales for each of the departments, and the amounts of the cash receipts and bank balances. This report, of course, is time-stamped, and, indeed, practically everything in our office is time-stamped, for we find this operation greatly expedites the work as it passes from one hand to another. It also saves disputes as to where delays arise, and the time-stamps have paid for themselves many times over in the increased celerity and efficiency of our office force since we first introduced them, twenty-two years ago.

Now to go back to statistics. The office has to make weekly reports of merchandise on hand and of sales made, and these were formerly copied laboriously by hand. As each partner gets one, and each department manager has to have those which pertain to the work of his department it means quite a number of copies. We found that although the printing was rather close we could manage registering copies, and now we make them up in bunches, with carbons copying through. A great variety of reports have to be made by the office and they are now all done in the same way, the process saving an immense amount of time and labor.

CATALOGUING ACQUAINTANCES

A BOND HOUSE downtown in New York was offered the whole issue of bonds on a street railway in one of the new cities of the Northwest. It seemed a good business chance, but the information about the street railway and the town were meagre, and the ordinary channels of verification supplied little or nothing. The offer was about to be rejected, when one of the junior members asked to be allowed a week to find out more about the conditions. The matter was laid by until the end of the following week. When the members of the firm came to discuss it again, the junior member had a

long typewritten report, from a friend of his, which not only gave the figures pertaining to the company, but told who the men were who were running it, what economic bases the town had for growth, how the charter was obtained, what interests were bound up in the company, and what ones were opposed to it. It gave the personal information which the official figures lacked. The bond house accepted the offer and made a good profit on the deal.

"It was lucky that you knew that man out there," remarked the senior member.

"It wasn't so much luck—I've worked for that," was the answer; and he took them into his office, and showed them, in a card filing case, among five or six hundred other names, the name and address of the man who had sent in the report. Underneath was written:

"Met Jan. 24, '99 in——; March 2nd, 1903, in New York. Lawyer; general practice for——Improvement Co.,——Bank, etc. Not in politics, but knows the inside. Specialty—land titles. Side interest—Northwest history."

"Some people," he resumed, "can carry hundreds of people in their heads, but I can't. And I guess even the best memories could not keep the address right and the little additional information which makes the list useful. This card catalogue has helped me a good many times. Through using it I know what point of view the man has who gives me the information I write for, and I haven't that check on most other information. Neither is the service all one sided. Only last week one of my catalogue friends, who is now in Arizona, got me to look up and get for him some old engineering books. Quite a number of them have asked me, too, as a favor, to do some bond business for them."

In other businesses the catalogue of acquaintances may be far more useful than in bond brokerage. In politics, where a wide acquaintance is a necessity, it is almost indispensable to those without phenomenal memories. Senator LaFollette, even with his great facility for recalling names and faces, uses this system. It is just as valuable to traveling salesmen, to lawyers, and to engineers; in fact, to everybody but hermits a wide acquaintance, geographically as well as numerically, is a valuable business asset. It is also one of the greatest pleasures which business affords—intercourse with other active men. And the little card catalogue can add greatly to almost every man's business efficiency and pleasure.

THE NEED OF COMMON SENSE ACCOUNTING

A RECENT discussion between a New York publisher and an expert accountant brings out clearly one of the most important points to be considered by a business man when he is introducing a system of accounting into his business.

This publisher has one form of daily cash statement that is probably unique. It is in addition to the usual statements of the condition of the business by sales percentages and so on. His business is divided into four departments, representing the several natural divisions into which the sources of income fall.

Every morning the head cashier lays on the publisher's desk a report, by departments, of the cash receipts of the previous day, and, in another column, the total receipts from the first of the month. On the other side is a statement of the payments made on account of each department with totals for the month. The aggregate difference debit or credit is shown for each department, and this with the balance of cash on hand on the first of the month agrees with the cash on hand at the end of the day. It is a complete statement of the income and outgo of cash, divided into its various sources.

When the publisher showed this report to the accountant he raised objections.

"What earthly use is there for such a report as that?" he asked. "It really shows nothing whatever about the condition of your business. It does not even show a comparison of the relative efficiency of your departments. For example; your wholesale department might not spend anything to-day, but, because of heavy collection receipts its

receipts might be unusually large. Yet tomorrow's report would show an increase in your credit balance that might easily be misleading."

"That's all true enough," the publisher replied, "but I don't use that report as an analysis of the condition of the business. It is valuable for other reasons. For one thing, it saves asking questions. In it are a lot of things I want to know every day, and this is a convenient form in which to get a memorandum of them without asking the bookkeeper. For example, I want to know from what source each department's receipts come. They can't be shown in an ordinary statement. That is one reason. But here is a better reason. A year from now these reports will be my most valuable abbreviated data for forecasting conditions that I must prepare to meet, and for comparison to verify my ideas of the causes of those conditions. No, that report is not useless. I think a great deal of it, and I would not try to get along without it."

The publisher's reply makes the point that the essential thing to be considered when a system of accounting is being installed is: "What do I want to know about my business?" One business man recently said to another, while discussing their respective systems of accounting: "Why, I wouldn't know some of the things about my business that you insist on knowing about yours for less than $5,000 a year. I would inevitably try to remember some of them, and in the effort I would forget half the things I need to know."

Certain things about any business every man must know, but there is always a particular set of facts that each man needs for his own peculiar purposes. These are the expression of his business individuality—the reflection of his personality and methods whose very peculiarity to himself is his strength. And it is these that he should consider with especial care when he is working out the service he may expect from his accounting department.

APPRAISALS OF NEW BOOKS

ROBERT LOUIS STEVENSON by G. K. Chesterton and W. R. Nicoll is a group of remarkable essays—with a notable opening one. Chesterton is a master of the epigrammatic style, but he has been content to cast aside that method of quick appeal to slow wits, and to write so soberly and with so large a philosophical view that the character he shows forth seems set down to us for all time. (James Pott & Co. 50 cents.)

INDUSTRIAL EFFICIENCY by Arthur Shadwell is a comparative study in two volumes of industrial life in England, Germany, and America. It is as nearly an exhaustive treatise as most readers could ask, and it is well-considered and carefully wrought out. Dr. Shadwell compares England and Germany in a pretty thorough way, but he balks somewhat at summing up America. He denies that we are a nation. He comments on our paternal over-legislation. He dwells on our lawlessness, but he admits that lynching is not a fair measure of our social conditions. Statistics are not crammed raw down our throats, fresh ripped from the census, but they are served up in almost appetizing fashion, and often predigested. The chapters devoted to separate sections of our country, show his open-minded judgment and scholarly method. It is a book that goes far toward giving material for the economics of the world's chief industrial activities. (Longmans, Green, & Co. $7.)

THE CHAMPAGNE STANDARD, by Mrs. John Lane is a chatty little book of essays deploring the increase of money and the decrease of brains in society to-day. The author is an American woman who has lived much in England. She is not quite in touch with our life, and judges from conditions of several years ago or makes the mistake of believing what she sees in periodical print.

As good citizens we resent her dictum that

only Englishmen know how to wear "very superior garments." Perhaps even if this were true, we should resent it. There may be a champagne standard in America but hardly for the mass of American people. But it is a bright book about the follies of the few and the dangers to the many. (John Lane, $1.50.)

THE SIEGE OF THE SOUTH POLE, by H. R. Mill. To many of us who do not go exploring there is no more fascinating reading than the stories of those who do. It is the North Pole which generally engages our attention, but in this book the unadventurous landlubber may learn of all the men who have struck south. Ships' logs are quoted and much description has been brought together, so that without being technical the book gives us as good a picture as we can hope for of the southern seas and of the men who have sailed them. (Frederick A. Stokes Co., $1.60 net.)

A HISTORY OF THE UNITED STATES AND ITS PEOPLE by Elroy M. Avery gives as its reason for being that "the needs of the public are very different from those of the professed student" and that so far most of the histories of the United States have been written for the professed student. Mr. Avery has tried to write a history that "would be actually read and easily understood." The first two volumes which have appeared have two distinct merits. In the first chapter is an account of all the important discoveries of early Indian remains and their significance, and in another chapter an illuminating account of the retreat of the glacial ice from the United States and the effect it had on the topography of the country. These two chapters and the chapter on the mythical and real pre-Columbian discoveries of America will open to the average reader a new and fascinating part of American history.

The other great merit of the book is the courage with which the author admits the limitations of his own first-hand knowledge. When an unsolved problem arises Mr. Avery labels it frankly and lets it hinder him no more. Nor does he hesitate to give at their face value the opinions of other historians on moot points.

This ambitious undertaking of the author and of the publishers—to make a great, comprehensive, popular history of the United States, from the earliest knowledge of the continent down to our own day, in a series of remarkably equipped volumes—to make, in fact, what they hope will be *the* popular history for use over a very long period and for very wide circulation—is one of the most interesting publishing undertakings of the time; and the two volumes have that appeared give evidence and promise of success. (Burrows Bros.)

IN PANAMA TO PATAGONIA, Mr. Charles M. Pepper gives us broad facts and he gives us details as well. He tells how the people look, and how many miles of railways they own. He takes up the different republics in order and tells us how to go to them, how to stay in them, and how to get away. His style is characterized by a connected fluency for which we look vainly in most other books on South America. It is practical, informing, broadening. (A. McClurg & Co., $2.50 net.)

IRRIGATION, by F. H. Newell, deals with a problem of increasing value and importance to us. The author is the chief of the Hydrographic Branch of the United States Geological Survey and chief engineer of the Reclamation Service, and he therefore writes with authority, and with the most recent knowledge about the relation of our forests, our streams, and our topography to the supply of water. He regards water in its capacity as persuader of the crops, and in its capacity as the greatest force that man may harness to his use. He deals with preserving the power that we now have and of providing more in the future. The book has to do directly and vitally with every individual and every industry in the land. (T. Y. Crowell & Co., $2 net.)

JOSEPH JEFFERSON, by Francis Wilson, does not pretend to be an accurate analysis of character, but the author is content to supplement the beloved actor's autobiography from the point of view which that must of course lack. The anecdotes, however trivial they may be, are all interesting, and the running comment of the actor-author puts us into the humor to receive his sketchy and effective pictures of Jefferson in action. It is a pleasing biographical side light—of intimate gleams—on an interesting life. (Charles Scribner's Sons, $1.50.)

AMONG THE WORLD'S WORKERS

DICKSON'S DEPARTURE

LATE in the spring of 1903, Mr. J. Warren Dickson, a railroad constructing engineer, was the guest at a farewell noonday dinner given in New York City by the men who were financing the first standard gauge railroad in Alaska. At the dinner, his bankers handed him a large draft on a Chicago bank and at 2:30 o'clock that afternoon he took a westbound train. As every day of the short open season in Alaska must be utilized, he had only six weeks in which to begin construction near Nome, 6,000 miles away, in a country so barren that there is not even a tree for sixty miles. When he left New York not a piece of material had been bought, except two little engines from the elevated road's old stock. These had been shipped to Chicago to be overhauled and "knocked down" for transport to Alaska.

On the train to Chicago he made up most of the specifications for the supplies necessary to build fifty miles of railroad, for a machine shop (which is now probably the most efficient in the Seward Peninsula), and for a camping outfit and commissary for 600 men. When he reached his hotel in Chicago a stenographer was waiting for him, and he continued his work for nine days, working twenty hours a day. In that time he completed the specifications, passed on the competitive bids, and purchased all the necessary supplies (excepting the lumber) for the whole fifty miles of construction. These supplies included one item of 2,750 tons of steel rails. He arranged with a firm of consulting engineers to pass on the supplies he had ordered, after he should leave; and with a trust company to discount the bills on vouchers from the engineers; he bought the equipment for his machine shop and fifteen freight cars and arranged with the Northern Pacific Railway Company to send them to Seattle on their own wheels, and loaded with the pieces of his engines and with other supplies. He then went ahead to the Coast.

On June 19, 1903, at one o'clock in the morning (there is continuous daylight for the twenty-four hours at that season) the first of the expedition landed on the uninhabited and utterly desolate coast of Seward Peninsula, thirty-six miles east of Nome and within 100 miles of the Arctic Circle. At one o'clock in the afternoon of the same day, the 40x60 foot mess tent was up, several 20x40 tents were in position, besides a number of the smaller tents—twenty in all—and the camp telephone system was being installed. Half an hour later—twelve and a half hours after the first man landed—Mr. Dickson broke ground for the first standard gauge railroad in Alaska, and eighty-seven men went to work on the construction. In three days 450 men were at work, and within two weeks, 6,000. To set up the first locomotive, a pit was dug in the sand and covered with a trestle and track, and the parts of the engine—some of them weighing more than eight tons—were hoisted into position by man power alone, and then joined.

When the season closed, October 19th, exactly four months later, eight miles of track had been built and rock-ballasted; the railroad yards and sidings were complete; a twelve-room dwelling-house and an office-building were up, each two and a half stories high and fitted for steam heating; a machine shop was running, in which the first standard gauge car ever made in Alaska was built in thirteen days; there was a complete telephone system in operation; and the ties, rails and other supplies for completing the road were hauled to the yards and piled in position for expeditious use in the following season. When the party broke camp, an inventory was made of every item on hand, and of the more than $400,000 worth of supplies bought, all but $100 worth was accounted for. In the season's experience only one necessary thing seemed to have been forgotten in the original order for supplies at Chicago. That was a set of coat-hooks, and Mr. Dickson left them out purposely, for the sake of economy, recalling that they could use nails instead. There was not one bodily injury or death during the season.

With the exception of a field engineer, Mr. Dickson was the only experienced railroad